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Politics this week

Dec 29th 2004
From The Economist print edition

Reuters

Asia's devastation

The world's biggest disaster-relief effort was launched after some 60,000 people were feared killed and millions made homeless by a **tsunami** across the Indian Ocean. Indonesia suffered the most casualties with over 32,000 believed dead; nearly 22,000 people died in Sri Lanka. Thailand, India, and countries as distant as Somalia and Kenya were also hit by the deadliest tsunami on record, which was caused by a huge under-sea earthquake.

See article

Afghanistan's newly elected president, Hamid Karzai, named a cabinet to continue the work of rebuilding a country ravaged by 25 years of war. Most of the country's warlords, including several who held posts in the previous government, were excluded.

See article

Israel's prime minister, Ariel Sharon, and his Likud party managed to form a new coalition government, including the Labour party, led by Shimon Peres, who should help him achieve his plan to remove Israeli troops and settlers from the Gaza strip.

See article

The insurgency in **Iraq** continued unabated, mainly in areas dominated by Sunni Arabs, but the interim government and its American backers said they were determined to go ahead with a general election on January 30th. A prominent Sunni-based party, the Iraqi Islamic Party, said it would boycott the poll.

See article

Campaigning began to elect a new president of the **Palestinian Authority**. Mahmoud Abbas, who took over from Yasser Arafat as chairman of the Palestine Liberation Organisation, seemed set to win.

See article

Venezuela's president, Hugo Chávez, claimed after visiting Beijing to have secured a spectacular upgrading of relations between his oil-producing nation and **China**. He said China would invest heavily in the Venezuelan oil industry and increase purchases of oil and other products.

See article

The government of **Colombia** said it was mobilising 120,000 security personnel after the kidnapping of at least seven holidaymakers from the resort town of San Rafael. The authorities blamed the FARC rebels for the abductions.

The opposition challenger, Victor Yushchenko, won the re-run of **Ukraine's** presidential election. But his opponent, the Russian-backed Victor Yanukovich, refused to concede defeat and threatened to challenge the result in court.

See article

The French public's rejoicing at the freeing of two journalists who were held **hostage in Iraq** continued—though so did questions over whether a ransom had been paid.

George Bush defended **Donald Rumsfeld** against mounting criticism from within the Republican Party both over a lack of body armour for troops in Iraq and his use of a machine to sign letters of condolence. Mr Bush said that his defence secretary was actually a “caring fellow”.

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Business this week

Dec 29th 2004
From The Economist print edition

Final chapter?

Russia's government raised yet more doubts about its commitment to the free market a few days after the forced auction of Yuganskneftegaz, **Yukos's** main production unit, to settle tax demands. Baikal Finance Group, an unknown bidder, paid a knock-down $9.4 billion. Rosneft, the state oil company, then said that it had bought Baikal, in effect renationalising the core of Yukos for far below its market value just a few years after a rigged privatisation saw the same assets sold on the cheap.

See article

Fannie Mae took action against bosses who had overseen accounting irregularities that had led to a $9 billion overstatement of profits. Franklin Raines, the mortgage giant's chief executive, and Timothy Howard, its chief financial officer, departed. Controversy raged after it emerged that Mr Raines would keep his vast pension.

After prolonged wrangling between Michel David-Weill, **Lazard's** biggest shareholder, and Bruce Wasserstein, its chief executive, the investment bank finally filed papers with American regulators in preparation for a flotation of shares worth up to $850m.

Microsoft failed to delay antitrust sanctions imposed by the EU until its appeal against them could be fully considered, a process that might take years. But the European Court of First Instance ordered the firm to provide at once a version of its Windows operating system without media software and to share coding information with rivals.

See article

Pfizer's shares fell sharply after an independent report suggested that Celebrex, the American drug firm's anti-inflammatory medicine, could cause heart problems. But Pfizer refused to withdraw the drug, stating that its own research refuted these claims.

The **dollar** hit a record low against the euro of $1.36. The greenback has fallen by 37% against the euro and by 24% against the yen since early in 2002.

See article

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The tsunami

Asia's devastation

Dec 29th 2004
From The Economist print edition

Reflections on a rare but terrible calamity

Reuters

THE clue lies in the Japanese name that has been adopted for them around the world: *tsunami*. Formed from the characters for harbour and wave, and commemorated in the 19th-century woodblock print by Hokusai that decorates so many books and articles about the subject (see article), the word shows that these sudden, devastating waves have mainly in the past occurred in the Pacific Ocean, ringed as it is by volcanoes and earthquake zones. Thanks to one tsunami in 1946 that killed 165 people, mainly in Hawaii, the countries around the Pacific have shared a tsunami warning centre ever since. Those around the Indian Ocean have no such centre, being lucky enough not to have suffered many big tsunamis before and unlucky enough not to count the world's two biggest and most technologically advanced economies, the United States and Japan, among their number.

So when, on December 26th, the world's strongest earthquake in 40 years shook the region, with its epicentre under the sea near the northernmost tip of the Indonesian archipelago, there was no established mechanism to pass warnings to the countries around the ocean's shores. There would have been between 90 and 150 minutes in which to broadcast warnings by radio, television and loudspeaker in the areas most affected, the Indonesian province of Aceh, Sri Lanka and the Indian chain of the Andaman and Nicobar islands. Had such warnings been broadcast then many of the tens of thousands of lives lost would have been saved. How many, nobody can know, for the task of evacuation would have been far from easy in many of these crowded, poor and low-lying coastal communities. Equally, though, it will probably never be known exactly how many people have died (see article). Whereas in many disasters the initial estimates of fatalities prove too high, the opposite is occurring in this case.

Making a virtue out of disaster

The question of whether there should now be some sort of seismic and even tsunami warning system established for the Indian Ocean is not currently the most urgent one, however. After all, big tsunamis are thankfully extremely rare occurrences. There is no reason in science to believe that they are becoming any more likely. The most urgent questions concern how much humanitarian aid can be mustered by the world's richer countries and how it can be distributed.

The Indian Ocean tsunami has been called the world's worst ever natural disaster. In terms of cold statistics, that is wrong, even as the estimated death toll climbs well past 50,000. Other earthquakes have killed more, especially in poor and populous countries such as China: probably

600,000 or more in Tangshan in 1976, and 200,000 or so on two occasions in the 1920s. Iran lost an estimated 50,000 people to a quake in 1990 and a further 26,000 in Bam exactly a year ago to the day, on December 26th 2003. It is not even the Indian Ocean's deadliest disaster, for cyclones have often brought worse, most notoriously in 1970 when the then new state of Bangladesh lost about 500,000 people.

What is special about this tsunami is the geographical extent of the devastation and the number of countries affected. Earthquakes produce terrible consequences, but normally of a highly localised sort. This time, particularly in Sri Lanka, Indonesia, India and Thailand, the damage stretches across thousands of miles and involves millions of people. That produces a huge logistical challenge for international organisations and aid agencies: how to get relief supplies and, later, reconstruction assistance to so many places at more or less the same time. Much more of the money and planning will have to be devoted to planes, helicopters, trucks and supply lines than in “normal” disasters and relief efforts.

But let not everything about this terrible event feel bad. For in that very geographical challenge lies also an opportunity, one that comes in three main forms. The first is that the involvement in the disaster of so many resorts favoured by tourists from rich countries in the West and the richer parts of north-east Asia has given it even more prominence in those countries than the sheer horror of the fatalities would have produced. Such selfish distortions are regrettable in theory—who noticed while millions were dying in Congo's wars?—but in practice they might as well be exploited. It ought to be possible to raise far more in charitable donations from individuals and organisations in rich countries for relieving this disaster than for single-country earthquakes or floods, for example.

The second is that the countries around the Indian Ocean itself should, on this occasion, feel motivated enough to assist each other, poor though all of them are, and to accept each other's help. Those that were less affected and those on neighbouring seas, including the Arab countries and around the Pacific, must surely be persuadable that they too could easily have been affected by such an act of God, whichever God it may be considered to have been.

That sense of mutual vulnerability brings us back to the question of warning systems and to the third way in which this disaster could be turned into an opportunity. Money and complacency are two reasons why no tsunami warning system exists for the Indian Ocean. But the region also suffers from a political fear of co-operation. Suspicions and mistrust between many of the countries bordering the ocean, and between those in the seismically turbulent region beyond, in Pakistan, Afghanistan, Iran and elsewhere, mean that habits of cross-border co-operation are weak. Even the exchange of seismic data is meagre, to say the least, let alone interchange on more politically and economically charged topics.

In 1999, when Greece and Turkey both suffered earthquakes in rapid succession, the urge to assist each other led to a considerable thaw in long-frosty relations. To build a warning system, including processes to share seismic data and to pass on alerts expeditiously, would not be an expensive operation. Nor would it prevent natural disasters in the future, such is the power and unpredictability of nature. But it could be a useful, non-controversial contribution to the easing of old political tensions—and to saving some lives.

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Pakistan

Another promise broken

Dec 29th 2004
From The Economist print edition

General Musharraf's decision to remain in uniform is a setback for the future of Pakistan

AFP

Get article background

IT WAS not a surprise, but it is still a disappointment. In December, Pakistan's President Pervez Musharraf, citing the need for "unity of command", confirmed that he would not keep a promise to give up his job as head of the armed forces by the end of 2004 and turn himself into a civilian leader (see article). This is trebly depressing.

By choosing to remain a general Mr Musharraf is, first, breaking the pledge he gave his parliament in return for its accepting the legitimacy of a president who helped himself to power in a coup. Second, the decision is an ominous sign that he may now be following the path trodden by Ayub Khan and Zia ul Haq, previous generals who seized power promising to restore democracy, only to find one-man rule so much more congenial. The third and less obvious depressing thing about Mr Musharraf's decision is that he is likely to get a free pass from the outside world. That is to say, neither America nor any other western power will press him hard to change his mind.

This is a mistake, even if it is an understandable one. To western eyes, Mr Musharraf has much to commend him. He understood immediately after September 11th 2001 that Pakistan would have to help America to overthrow the Taliban regime that Pakistan itself had helped install in Afghanistan. He has cooled Pakistan's quarrel with India over Kashmir, and so averted the danger of a nuclear war. He has promised to hunt down Osama bin Laden and other terrorists who may be hiding in Pakistan. He says he will purge the network of *madrassas*, the religious schools in some of which young Pakistanis are taught to hate Hindus, Jews and the United States. Besides, as dictators go, he is not a harsh one. Pakistan does, after all, have that parliament, plus opposition parties, and—thanks to a deal with an alliance of religious parties—a president with a veneer, at least, of constitutionality. Given some plausible alternatives, such as Pakistan's collapse into a failed state, or one that supports Mr bin Laden, it is easy to see why policymakers in Washington think it best to stand by him.

The devil-you-know argument is fine as far as it goes. Its defect is the one that applies to all dictatorships: a policy built on one man is a policy built on sand. Although Mr Musharraf is plainly a man the West can do business with, it is equally plain that he will not be around for ever—even if he continues to dodge the Islamic extremists' persistent attempts to assassinate him. Meanwhile, the hope that he would use his presidency to restore and strengthen democratic institutions in Pakistan is waning. Apart from failing to doff his uniform, he has not made his peace with the secular opposition. He has not acted seriously against the *madrassas.* It is not clear whether he has purged the army and intelligence services of their own religious extremists.

Though he has hunted down foreign terrorists who threaten his own life, he has done less to root out Pakistan's home-grown terrorists, who are increasingly active. And when Abdul Qadeer Khan, the father of Pakistan's bomb, was found to have been selling nuclear secrets far and wide, Mr Musharraf let him off for an apology.

Pakistan is a volatile place. This makes it tempting to take Mr Musharraf at his own estimation as a good egg, better able than outsiders to judge how to balance the army, the mosques and the democrats, and how fast he can creep towards modernity. But wishful thinking based on a presumption of good intentions is no policy. The world may come to regret its failure to hold the general more strictly to his many promises.

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Ukraine's presidential election

The future is orange

Dec 29th 2004
From The Economist print edition

After Victor Yushchenko's election victory

EPA

Get article background

IT HAS been a lengthy election process even by American standards. And the loser is still bleating about court challenges. Yet it now seems certain that Victor Yushchenko, the opposition candidate, will be declared the winner of Ukraine's 2004 presidential election. His victory in the re-run on December 26th over the prime minister, Victor Yanukovich, was decisive, and international observers agreed that the ballot was far more honest than the one on November 21st that was later annulled by Ukraine's supreme court.

Mr Yushchenko's win is a huge blow against the outgoing president, Leonid Kuchma. It is also a blow against Russia's president, Vladimir Putin, who intervened brazenly in favour of Mr Yanukovich, the proclaimed winner in November (the Kremlin has kept quiet about Mr Yushchenko's victory this week). But more than either, it is a resounding and heartening blow for would-be democrats, especially in the countries of the former Soviet Union—not least Russia. Mr Yushchenko rightly declared that, although Ukraine won independence 14 years ago, only now has it won freedom (see article).

What should President-elect Yushchenko do now? His first priority must be to mend fences with his opponents, and with Russia. By the official count, over 44% of voters, mostly in the Russian-speaking south and east, backed Mr Yanukovich. The danger of the country splitting apart can be exaggerated, but it undeniably exists. Russia supplies almost all of Ukraine's energy; its Black Sea fleet is based in Sebastopol, in the Crimea, a region that overwhelmingly backed Mr Yanukovich. In short, Mr Yushchenko must urgently establish good relations with Moscow, despite its support for his opponent and despite rumours of Russian security-service involvement in an attempt to poison him with dioxin last autumn.

He will find this easier to do if he avoids provoking Mr Kuchma and his supporters too openly. One of Mr Yushchenko's appeals to Ukraine's jaded voters was his apparent incorruptibility. It would be right to re-examine the dodgier privatisations of the Kuchma era, but Mr Yushchenko would also be wise to seek reconciliation with his opponents, and not to devote too much effort to raking over the past. He would also be sensible to choose a more conciliatory figure as prime minister than the fiery Yulia Timoshenko, who has spoken in the past about putting Mr Kuchma on trial.

Beating the path to Brussels

Beyond this, Mr Yushchenko's main objective must be to liberalise Ukraine's economy and set it, at long last, on the road to prosperity. His past experience as central-bank governor and, briefly, prime minister should stand him in good stead. But he also needs help from the West, and above all from the European Union, Ukraine's biggest trading partner.

So far Europe and America have done well by Mr Yushchenko, supplying thousands of election monitors, backing civic activists and refusing to accept Mr Yanukovich's “victory” in November. But now that their man—or at least their process—has won, the danger is that Ukraine lapses back into being a faraway country of which they know little. In truth, the West has a vital interest in Mr Yushchenko's success, partly for Ukraine's sake, but also as an example to other ex-Soviet countries. And the best help it can give is economic: aid, of course, but also investment and above all trade opportunities.

That means helping Ukraine join the World Trade Organisation; cutting the EU's high tariffs on steel and farm exports, among the few industries in which Ukraine has competitive producers; and, most of all, putting Ukraine on track towards EU membership. Yet whereas the pre-Christmas EU summit agreed to open membership talks with Turkey next October, it made no moves towards making Ukraine a potential, even if distant, candidate. Now that Mr Yushchenko has won, the EU must offer him a clear path towards membership. A liberal, democratic Ukraine has at least as strong a claim as Turkey does to join the European club.

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British constitutional reform

A little light on government

Dec 29th 2004
From The Economist print edition

The Freedom of Information Act is a good thing, but does not make up for a wider failure

WHEN Tony Blair came to power in 1997, Labour's main challenge was to win economic credibility, so it committed itself to its predecessor's spending plans for two years. With economic radicalism not an option, it made much of its big ideas for constitutional reform. They sounded good to liberals worried by Britain's system of government by nods and winks and keen to check over-centralised executive power.

The Freedom of Information Act, which comes into full effect on January 1st, was central to those ideas. In a country in which unauthorised parties who revealed the number of sugar lumps a civil servant took in his tea were once breaking the law, it was supposed to shine a light on what government was up to; and, by doing so, to discourage the dark dealings to which the unobserved exercise of power can lead.

The act (see article) looks likely to live up to expectations. Not that its initial impact on government will be huge—people take a while to work out how to use new tools—but the model looks a good one. Unlike Americans, who have to take the government to court themselves to force it to share its secrets, Britons have a champion—the information commissioner—to do the job for them.

Yet while the Freedom of Information Act gives grounds for celebration, it also throws into relief the government's patchy progress in fulfilling those original constitutional hopes. Part of the problem has been poor political management. Plans to abolish the Lord Chancellor's anomalous role as head of the judiciary and member of the cabinet were introduced with no consultation, and led to a revolt in the House of Lords which forced a retreat. In the end, though, the government has given way on keeping the Lord Chancellor's title, but not on the more important issues of creating a Supreme Court separate from the House of Lords, and of distancing the appointment of judges from the politicians.

Another part of the problem, however, has been bad faith. In two big areas of constitutional reform, the government has been looking after its own interests better than its citizens'.

Peering ahead

Setting up assemblies in Scotland and Wales certainly seemed a radical step; yet it has, arguably, served the government better than the people. It has disarmed the nationalists but has not given

those assemblies the responsibility for raising as well as spending money without which politics never develops beyond the pork-barrel. The decisive rejection by north-easterners in November of a proposal to give it a similar assembly may be read as a sharp comment on what the next-door English neighbours think of Scotland's set-up.

Worse still has been the betrayal over the House of Lords. After getting rid of most hereditary peers, the government seems to have decided that a more legitimate and therefore more powerful second chamber would not necessarily be in its interests. Consequently, it tried to force through a mostly-unelected version; gave up in the face of a revolt; then parked the issue with a committee which shrugged its shoulders and threw it back at the government.

Mr Blair deserves credit for tackling issues which his predecessors have ducked. But if Labour's record on the constitution is to win, rather than lose, it credit at the election expected in 2005, its manifesto needs to include a clear commitment to the elected second chamber it so clearly dreads.

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Letters

Dec 29th 2004
From The Economist print edition

The Economist, 25 St James's Street, London SW1A 1HG
FAX: 020 7839 2968 E-MAIL: letters@economist.com

The dollar's dive

SIR – The Bush administration's attitude toward the decline of the dollar is influenced by a powerful manufacturers' lobby that cares only about its narrow short-term interests ("The disappearing dollar", December 4th). The view that a severely devalued dollar will boost exports and the earnings of companies is myopic.

The dollar's decline and its eventual collapse as a reserve currency is a scenario paved with ruin for everyone, including profligate politicians; Americans whose living standards will decline sharply; the government, which will find itself unable to finance future deficits; and industry, as sales overseas will be more than offset by diminished purchasing power and deep recession in the home market. The consequences of the collapse of sterling as a reserve currency have been quickly forgotten, it seems.

Luis Suarez-Villa
Irvine, California

SIR – The dollar has gone through many cyclical downturns yet it makes up about two-thirds of global reserves, slightly higher than in the 1990s. Go back a few years to the advent of the euro and you will find plenty of reports of the imminent demise of the dollar as a reserve currency. A decade earlier the resurgent yen promised the same.

However, most global trade, Asia's external debt, foreign-exchange liquidity and financial assets are still denominated in dollars. Central banks may diversify reserves for portfolio management but not for traditional reserve functions. And just as you don't need more than one currency circulating in a domestic economy, so you don't need more than one global reserve currency.

John Cairns
Singapore

SIR – Why would anyone choose the euro over the dollar as a reserve currency? Given the difficulties a single currency has created for the conduct of domestic monetary and fiscal policy, Europe's much more immediate pensions problem and its greater exposure to terrorist threats, it is clear that no one would. America has a large and growing economy, open and deep financial markets, and a remarkable record at combating inflation. As the market shows, buyers of American bonds do not consider the currency a failed store of value.

Dave Tucek
St Louis

Another brick in the wall

SIR – The techno-gurus at the University of Paris may not recognise the key obstacle to acceptance of "smart walls" and the use of tapping to replace remote controls: tidy mums ("Good vibrations", December 4th). I can hear the screams of maternal frustration as legions of children, freshly ensoiled from vigorous outdoor activity, tap and rub newly painted surfaces to access the Cartoon Network. While the "Good Vibrations" by the Beach Boys may serve as inspiration for the technicians, design consultants are likely to rediscover the Rolling Stones as mothers everywhere are tempted to "Paint it Black".

Bruce Harris
Fairfax City, Virginia

Looking east

SIR – George Bush does not deserve chastisement for his assertion that when he met Vladimir Putin in 2001 and looked him straight in the eyes, he got a feel for his soul and determined on the spot that Mr Putin was trustworthy ("The challenger", December 11th). Unfortunately, Mr Bush was not briefed that Mr Putin had cataracts.

William Smith
Palm Desert, California

SIR – Your recent discovery of Ukraine is long overdue but your indifference mirrors that of Europe, which has always pretended that Ukraine does not merit much attention. Had you, and Europe, been following this 49m-strong country more closely, you might not have found events all that surprising. Neither would the EU have been quite as mystified about what to do next.

Alexander Motyl
Camden, New Jersey

Adjusting to outsourcing

SIR – Your survey of outsourcing sidesteps the issue of adjustment costs (November 13th). But the very service-sector "jobs of the future" that displaced manufacturing workers were supposed to take are now also flowing abroad. Job losses of the magnitude you project would not be cost-free. The millions of American manufacturing workers displaced in recent years have fared poorly, on average taking five months to secure new jobs paying 20% less than their old ones. Mass outsourcing could only complicate the transition to a service economy by undermining traditional strategies for confronting de-industrialisation, such as call-centres and retraining in computer and clerical skills. Adjustment costs would include higher transfer payments, greater consumer debt, worsening income distribution and greater economic insecurity.

The resources freed through outsourcing might be reallocated to more profitable uses but these opportunities are likely to be reserved for the highly educated, not the workers displaced by global competition. Policymakers should safeguard the welfare of their citizens by ensuring that the process of outsourcing is gradual enough to minimise the costs of adjustment.

Karl von Schriltz
Washington, DC

UNreasonable

SIR – Your descent into abject hypocrisy was never more obvious than in your article on Kofi Annan ("Blaming Annan", December 11th). You called on Donald Rumsfeld to resign in the wake of Abu Ghraib because that is what leaders are supposed to do when things go wrong on their watch. Yet you ignore Mr Annan's complicity in the Rwandan genocide and the Iraq scandal. To blame a committee (the Security Council) that is nominally the ultimate authority and not the man charged with managing the organisation is disingenuous. And dismissing critics as "not friends" of the UN rationalises its pattern of little or no transparency and accountability.

Steve Weiss
Amsterdam

SIR – Your claim that calls for Mr Annan's resignation are premature is absolutely absurd. Consider his failure of leadership in the Balkans and Rwanda. Add to that the sexual-harassment and oil-for-food scandals which have occurred on his watch and you have one of the most incompetent and corrupt world figures of recent times.

Jesse Taylor
Boca Raton, Florida

SIR – In your defence of Mr Annan, you say that "there are times when an organisation's head should resign even when he is innocent, because the accusations alone are enough to bring the organisation into disrepute. This is not yet one of those times." You are right. The UN was brought into disrepute decades ago.

Ned Farmer
New York

Cold war

SIR – You state that "Football is as close to fighting a war as one can come without guns and explosives" ("Playing to win", December 4th). I take it that you have never seen a game of professional ice hockey?

Tom McNamara
Rennes, France

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Asia's tsunami

The cruel sea

Dec 29th 2004 | COLOMBO, DELHI AND PHUKET
From The Economist print edition

EPA

A whole region struggles to recover from the aftermath of the biggest earthquake seen for 40 years

THE sequence with which the news unfolded followed the global economic order. First, early on December 26th, through the miracle of mobile telephony, came the horror stories of western tourists spending their Christmas breaks by the sea in places like Sri Lanka and Thailand, on opposite sides of the Bay of Bengal. Their beach-side haunts had been deluged by huge tidal waves. From then on, the known scale of the disaster has kept rising remorselessly. The victims—many tens of thousands dead, hundreds of thousands displaced, millions coping with loss—were, as usual, mostly the poor, vulnerable and remote. Entire villages of uncounted, nameless fishing people were swallowed by the sea that sustained them.

The region had been shaken by the biggest earthquake the world had seen since 1964, registering a magnitude of 9.0. Its epicentre was under the sea, off the northern tip of the Indonesian archipelago. Besides devastating parts of Indonesian Sumatra, the quake set off sea surges that reached as far as the coast of Africa, where dozens of Somali fishermen perished, 6,500km (4,000 miles) from the epicentre. The tsunami wreaked havoc around the Bay of Bengal, from India, Sri Lanka and the 1,190 low-lying islands that make up the Maldives in the west, to Thailand and Malaysia in the east.

How many died may never be known. As *The Economist* went to press, the figure was passing 60,000 and seemed set, inevitably, to rise. In Thailand, officials said that bodies would continue to

be washed up for months. Tens of thousands died in Sumatra alone. It took days even to reach some of the worst affected areas, in the province of Aceh. Perhaps as many were killed in Sri Lanka and southern India. In the Andaman and Nicobar islands, an Indian archipelago some 1,200km from the mainland, which suffered a series of aftershocks in the days following the big quake, at least 3,000 died, thousands were missing and an anthropological as well as a human disaster was feared: the utter extinction of a number of unique small tribes. Most of the islands had no high ground to which inhabitants might have escaped the wave, and were several sailing days from help.

The death toll, appalling though it is, is unlikely to break records. Bangladesh lost 500,000 in the 1970 cyclone; perhaps an even higher number were killed by the earthquake in Tangshan, in China, in 1976. But Alan Bradbury, of the Red Cross in Delhi, called this tsunami one of the worst natural disasters ever—not just because of the terrible toll in human death, but also because of its unprecedented geographical scope and the number of people affected. The United Nations gave warning that it would need the biggest-ever international relief effort.

Across the region, hospitals and mortuaries overflowed. In southern India, the authorities resorted to mass burials as well as cremations. Both the World Health Organisation and the United Nations gave warning that as many could die from disease—malaria and dengue fever, as well as typhoid and cholera—as from the tsunami itself. Clean water, uncontaminated by sewage, was the first essential. But survivors also lacked fuel, food, medicines and, often, even shelter and cooking pots.

Almost at once, finger-pointing started. It took between 90 and 150 minutes after the quake for the tsunami to reach the coastlines where it did most damage. Why was there no warning? India, for example, is not part of a 26-country warning system that uses seismic sensors and tidal gauges attached to buoys in the ocean. Its members are mostly countries in and around the Pacific, where tsunamis are much more common.

Arun Bapat, an Indian seismologist, nonetheless cites examples of four previous tsunamis that have reached India. And he argues that, even without the warning system, there should have been time enough to alert people of the looming peril by television and loudspeaker. Similar questions were asked in Thailand, which is part of the warning system—though its west coast, where this disaster struck, is not covered. Some scientists argued that the effect of the tsunami was exacerbated by the widespread cutting down of coastal mangrove swamps—in both Thailand and India, for example.

Some of the Indian criticism seems unfair. The tsunami was freakish. A report produced in 2004 by the United Nations Development Programme, which pioneered a “disaster-risk index”, noted that some countries, such as Papua New Guinea, were poorly represented in the model because they are “affected by hazards that are not of global significance”, such as tsunamis and landslides. Just after this quake, monitors at the Geophysics and Meteorology Agency in Jakarta, the Indonesian capital, said they had no information about even the possibility of a tsunami.

Assessing the damage

The cost of relief and rehabilitation will run into billions of dollars. Sri Lanka was quick to declare a national emergency and appeal for international help. Thailand's prime minister has estimated the damage at $510m, or 0.36% of his country's GDP in 2003. Thai Airways has been badly hit, with cancelled or postponed bookings already totalling nearly $7m.

Insurers, at least, will be relieved that most of those whose livelihoods have been destroyed were not covered. Some hoteliers will make claims, as will families of western tourists who were covered by life insurance. Their bill, however, is likely to be far lower than the one that followed the hurricanes in Florida and its neighbouring states earlier in 2004.

One of the few insurers to make an early estimate is Munich Re, the world's largest reinsurer. It expects to pay out less than €100m ($140m). Hannover Re, the world's fifth-largest reinsurer, predicts its total claims in a range of €10m-20m before tax. Considering the size of these companies, the damage is limited. Still, the markets have reacted with pessimism; 2004 has been a heavy year for payouts for natural disasters.

The regional economic impact may be contained. In many countries, the disaster is, obviously, a huge blow to important tourist industries, which have had to cope with years of setbacks: the two-decade long civil war between Tamil “Tigers” and the government of Sri Lanka; the choking smog known as the “haze” that engulfed much of South-East Asia in 1997 and 1998; the terrorist bombing of tourists in Bali in 2002; the SARS outbreak in 2003.

Sri Lanka, where a nearly three-year ceasefire in the civil war has helped the industry recover, will be badly hit, as will the beach resorts of Thailand, According to the World Travel and Tourism Council, an industry body, tourism in Thailand generates 12% of GDP and 9% of employment. But with the exception of the Maldives, which is tiny, no affected country wholly depends on tourism. And although millions of livelihoods have been destroyed, analysts do not expect the disaster to make much of a dent in the region's overall growth prospects.

Living by the ocean

That, however, is little consolation to the poor people affected. The tsunami battered some well-established tourist destinations where the travel business has brought a degree of prosperity, such as Phuket in Thailand, other parts of the Thai west coast, Malaysia and, an ocean away, southern Sri Lanka and the Maldives. (In Khao Lak, in Thailand, which was full of tourists from northern Europe, a provincial official complained that the local coffins were too small for the bloated bodies of the foreigners.) But thousands of miles in between have seen little development at all. In the southern Indian states of Tamil Nadu and Andhra Pradesh, in the Nicobars and in the Tiger-controlled north of Sri Lanka, the sea's victims were subsistence farmers and fishing people eking out a precarious living in, or at the edge of, a fickle ocean.

EPA

Desperate for help and clean water

Rebuilding their lives is the challenge facing the relief effort. It will be a logistical nightmare, since in many places, such as Sri Lanka, much of the infrastructure needed to reach the stricken villages has itself been destroyed. Estimates of casualties there shot up on December 28th when the wreck of a train was discovered, engulfed by the sea with hundreds of passengers on board.

In Sri Lanka and elsewhere, hundreds of thousands are displaced. Some may drift into towns or be left for months in temporary camps. But most will have no choice but to return to the debris of their homes, the wreckage of their fishing boats and their fields drenched with salt water, and start their lives again. Many will do so with a sense of insecurity. In Nagapattinam district in Tamil Nadu, where at least 3,500 people died, scenes of mass panic greeted rumours that there had been warning of renewed surges. In fact, says Mr Bapat, there is little chance of another dangerous tsunami, since no aftershock to the first quake would have the strength to generate one.

Crumbs of comfort

Amid the wreckage, some sought glimmers of light. The tsunami, it was argued, offered some political hope of reconciliation between hostile communities: Muslims and Buddhists in southern Thailand, Acehnese and the Jakarta government, Tamils and Sinhalese in Sri Lanka. Both in Aceh, where the Indonesian government has been waging a vicious anti-secessionist war for 28 years, and in Sri Lanka, it was argued that the warring sides might find common cause in disaster relief. Both the Indonesian armed forces and the Free Aceh Movement have called ceasefires. But it is unclear how long the truce may last, or what access international relief agencies will be given to the area where conflict rages.

Similarly, in Sri Lanka, some of the most severe damage was done in areas controlled by the Tamil Tigers. In theory, co-operation with the government in administering disaster relief might help build confidence and strengthen the shaky ceasefire. In practice, such co-operation is likely to prove impossible, leaving Tamils in Tiger areas—like disaffected Acehnese—feeling even more disregarded by the central government.

As the grim statistics of the disaster grew grimmer with each passing day, any optimism grew harder to sustain. But there was one small exception. In parts of India, people trooped to temples to make offerings to appease the angry sea-goddess. In the short term, at least, her fury seems to have eased.

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Tsunami warnings

Run like the wind

Dec 29th 2004
From The Economist print edition

How to avoid dying in a tsunami

ONE pertinent question in the wake of the earthquake near Aceh and the tsunami it generated is how much notice of an approaching wave can be given to vulnerable people without the risk of crying "wolf" too often. Earthquakes themselves are unpredictable, and likely to remain so. But detecting them when they happen is a routine technology. That was not the problem in this case, which was observed by monitoring stations all over the world. Unfortunately for the forecasters, although any powerful submarine earthquake brings the risk of a dangerous tsunami, not all such earthquakes actually result in a big wave, and false alarms cost money and breed cynicism.

On top of that, most "tsunamigenic" earthquakes, which are caused when the processes of plate tectonics force heavy, oceanic crustal rock below lighter, continental rock to create a deep trench at the bottom of the sea, occur in the Pacific, which is almost surrounded by such trenches. In the Indian Ocean, deep trenches are confined to the southern coast of Indonesia, and tsunamis are rare. Since most of the countries affected by this tsunami are poor, or middle-income at best, and monitoring costs money, this might suggest that a fatalistic approach to the question is reasonable. But American and Japanese experience suggests that effective monitoring need not be that expensive.

These two countries have networks of seabed pressure-detectors that can monitor tsunamis and indicate whether and where evacuation is necessary—data they share with their Pacific neighbours. A system of seven detectors, run from Hawaii, cost about $18m to develop, and the experience gained doing so means a similar system might now be had for as little as $2m. So, to the sound of stable doors being bolted firmly shut, politicians in South-East Asia and Australia are proposing one for the Indian Ocean.

Detecting tsunamis directly, rather than relying on earthquake monitors, is important for another reason, too. Not all tsunamis are caused by earthquakes. Some of the worst, such as a 15-metre-high monster that killed more than 2,000 people in New Guinea in 1998, are the result of submarine landslides (though these can themselves be triggered by earthquakes, as was the case in New Guinea). Indeed, a few years ago it was suggested that a landslide in an unstable part of La Palma, one of the Canary Islands, might cause a tsunami that would devastate the east coast of America.

Even if you have an effective detection system, though, it is useless if you cannot evacuate a threatened area. Here, speed is of the essence. Computer modelling can help show which areas are likely to be safest, but common sense is often the best guide—run like the wind, away from the sea. Evacuation warnings, too, should be easy to give as long as people are awake. Radios are ubiquitous, even in most poor places. It is just a matter of having systems in place to tell the radio stations to tell people to run. The problem was that no one did.

The Supreme Court

The coming firestorm

Dec 29th 2004
From The Economist print edition

Corbis

Liberals are aghast and conservatives thrilled at the possibility of George Bush reshaping the nation's highest court in 2005. It may not be as simple as that

“MAKE no mistake about it,” Theodore Olson, a former solicitor-general and a possible candidate for the Supreme Court himself, said after the November election, “any attempt [to fill a vacancy on the court], especially that of chief justice, will set off a political firestorm. The presidential election was merely about the next four years. A Supreme Court justice is for life. It will not be pretty.”

The composition of the present court has remained unchanged for more than a decade—longer than that of any other Supreme Court in the past 180 years. The news that William Rehnquist, the 80-year-old chief justice, has been undergoing chemotherapy for throat cancer, has sparked a bout of speculation that he might retire. There have also been rumours that both John Paul Stevens (who is 84) and Sandra Day O'Connor (74) may go. Most of the other justices—Antonin Scalia (68), Anthony Kennedy (68), David Souter (65), Clarence Thomas (56), Ruth Bader Ginsburg (71), Stephen Breyer (66)—are hardly spring chickens. And most Americans want mandatory retirement for judges.

This could give George Bush a golden opportunity to remould the court in the same brazenly political way that most of his predecessors have done. Of the 108 justices who have served on the Supreme Court since it was set up in 1790, all but a dozen have come from the same party as the president who appointed them (after confirmation by the Senate). Most of the justices have had some form of political experience (William Taft was actually president), and a third have had no

prior judicial experience (a group that includes Mr Rehnquist, who was assistant attorney-general in the Justice Department).

Pigeonholing justices is a dangerous sport. But the current court can be crudely split into three conservatives (Scalia, Thomas and Rehnquist), three liberals (Stevens, Ginsburg and Breyer) and three moderates (O'Connor, Souter and Kennedy). Roughly two in five of their decisions are unanimous, but one in four are decided by five-four splits.

Opinion as to how far Mr Bush wants to go in “conservatising” the court tends to divide into two schools. The first, which contains plenty of pessimistic liberals, predicts that Mr Bush's debt to conservative voters, together with his own inclinations, will lead him to appoint strongly conservative judges who would clamp down on abortion, gay rights, affirmative action and so on. “This is a once in a generation opportunity to remake the court,” laments one of the country's best-known Democrats, who predicts that Mr Bush will in effect overturn *Roe v Wade*, the landmark 1973 ruling which established a woman's right to abortion. According to the Centre for Reproductive Rights, up to 30 states are poised to make abortion illegal should *Roe v Wade* be overturned.

The other school, which contains plenty of pessimistic conservatives, believes that Mr Bush will opt for more moderate candidates in the hope of avoiding alienating middle-of-the-road swing voters. For instance, the Republicans have considerable support when it comes to limiting late-term abortions and getting teenagers to notify their parents, but most Americans believe abortion should not be illegal. Nearly two-thirds of Americans say nominees for the court should reveal their position on abortion before confirmation.

Mr Bush appointed plenty of conservative judges to lower courts during his first term. But when it comes to the Supreme Court he has hidden behind a formula: if a vacancy occurs, he will “pick somebody who knows the difference between personal opinion and a strict interpretation of the law”. With swing voters worried about abortion, he stresses there will no “litmus test” for his nominees.

Yet Mr Bush has also reassured conservatives by saying that he has a firm preference for “strict constructionists”. By this he means justices who will concentrate on interpreting the law, as opposed to “activist judges” who, for instance, rewrite the law in favour of gay marriage, as judges appeared to do in Massachusetts.

It is here that liberals begin to worry. The two reputedly strictest constructionists on the court—Messrs Scalia and Thomas—are also the two most conservative members. Both have voted to uphold laws criminalising homosexual acts, banning racial preferences, allowing state-sponsored school prayers, requiring states to subsidise religious instruction and so on. Both have made it clear that they would have voted against *Roe*. The prospect of Mr Scalia, a friend of Dick Cheney, being promoted to chief justice, is one reason why liberals have suddenly become so solicitous of Mr Rehnquist's health.

Yet Mr Scalia also illustrates the danger of pigeonholing justices. Appointed by Ronald Reagan in 1986, he delights in castigating “unelected politicised judges” who think they have “the power to do good” with their “abstract moralising”. He wants legislatures, not judges, to decide whether to decriminalise things like abortion, homosexual conduct or assisted suicide. But he is hardly a literal interpreter of the constitution; indeed, he has described strict constructionism as a “degraded” approach that “no one” should follow.

The abortion issue, in particular, is not simple for conservative constructionists. Supreme Court justices of all persuasions are normally reluctant to overturn the decisions of their predecessors, especially when they have been in force for so long. Conservative jurists in particular tend to defer

to the principle of *stare decisis*, or established precedent. Even if a conservative jurist dislikes *Roe*, he might still think it would be wrong to overturn it. (This is a position that Mr Rehnquist himself might well take.)

With these caveats, how much difference would a new conservative appointment make? The answer is that a lot depends on who goes. It is easy to imagine Mr Bush replacing Mr Rehnquist with a still more conservative justice—and it having relatively little effect on the court's balance. Indeed, it would be bizarre if Mr Bush did anything else, given his debt to the conservative movement.

Replacing say Mr Stevens or Mrs O'Connor, both of whom have supported abortion choice, with an out-and-out conservative would obviously make more of a difference. The Democrats would also fight much harder against the nominee. They have already blocked other Bush judicial nominees with filibuster threats. Just before Christmas, the White House, emboldened by Republican gains in the Senate, said it would renominate 20 controversial judicial nominees. The Senate Republicans have also threatened to change the filibuster laws.

The White House reportedly thinks Mr Bush should put forward his toughest (ie, most conservative) Supreme Court nominee now, while he is still basking in the post-election glow. Among the most commonly mentioned possible candidates are Harvie Wilkinson, a judge on the Fourth Circuit federal appeals court in Richmond, Virginia; Michael Luttig, who sits on the same court; Edith Jones, a Fifth Circuit appeals judge; and Larry Thompson, a former deputy attorney-general and now general counsel of PepsiCo.

But it has always been notoriously difficult to predict how a judge will behave once he or she gets on to the Supreme Court. There has been a marked shift to the left by the present supposedly conservative-dominated bench, for example. “Packing the Supreme Court just doesn't work,” President Harry Truman said ruefully: “Whenever you put a man on the court, he ceases to be your friend. I'm sure of that—I've tried it.” Dwight Eisenhower agreed. When asked about the mistakes he had made during his presidency, he reportedly replied that the two biggest were sitting on the Supreme Court.

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Politics and the law

My judge is a party animal

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Representative democracy beats judicial independence

WHEN George Bush does eventually nominate a Supreme Court justice, there will be a lot of guff from both sides of America's political schism on two issues: whether the person concerned reflects the nation as a whole and whether he is concealing his politics. But what happens when you try to make judges represent the electorate and declare their politics?

Nine out of ten American judges stand for election. The theory is admirably democratic: if the people who make laws are elected, why shouldn't those who interpret them be too? But that theory is increasingly coming into conflict with the idea that judges should be impartial.

Until recently, judicial candidates were usually prevented from saying much, on the basis that it could later raise questions about the courts' independence. Conservatives have long fumed that such curbs have let “activist judges” hide their views on subjects such as abortion; the restrictions, they add, infringe free speech. In 2002 the Supreme Court agreed: in *Republican Party of Minnesota v White*, it struck down Minnesota's “announce clause” prohibiting judicial candidates from airing their views on disputed issues.

The *White* decision, as it is known, will surely help to speed up the politicisation of judicial elections. Already in some states it is common for prospective judges to run radio ads boasting of, say, their opposition to gay marriage or their views on tort reform. Meanwhile, special interests are pouring money into judicial races. In the 2004 campaign, two people running for a seat on the Illinois Supreme Court raised $10m—more money than was spent in 19 out of the 34 Senate races, according to Justice at Stake, a watchdog group.

Like other landmark decisions, *White* has set off a series of legal reverberations, with activists trying either to reinforce or increase its scope. For instance, an anti-abortion group has won a case in Kentucky challenging a local rule that banned judicial candidates from making specific pledges; similar “pledge” suits are pending in Alaska, Indiana and North Dakota.

Meanwhile, the *White* case itself is far from over. Although the Supreme Court ruled on Minnesota's announce clause, it asked the Eighth Circuit Court of Appeals to consider several other curbs in the state. At risk are rules that keep judicial candidates from seeking endorsements from outside groups, engaging in face-to-face fundraising and, crucially, declaring themselves “Republican” or “Democrat”.

A ruling from the Eighth Circuit is expected soon, but, from the point of view of judicial independence, any further relaxation would be worrying. Minnesota is one of 19 states that hold some non-partisan judicial elections (partly to stop judges becoming ensnared in parties' fundraising machines). Republican-Democrat judicial tussles tend to be more expensive and contentious than non-partisan ones.

Striking down the rule against face-to-face fundraising would also have wide ramifications. At present, most judges have to raise their money “blindly”, through committees that do not tell the candidates who has given them money. Allowing prospective judges to look donors in the eye while they make clear their stances on issues could well come dangerously close to judges selling pledges. Another appeals court, the 11th Circuit, has already struck down the face-to-face ban.

Is the judiciary becoming politicised by stealth? Roy Schotland of the Georgetown Law Centre blames the legal establishment. In most states, he says, the high courts and bar associations have generally opposed relaxing political curbs, but they have been “pathetically passive”. Meanwhile, conservatives have been fired up by recent liberal decisions by activist judges—notably the legalisation of gay marriage in Massachusetts.

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The home front

Find the deputies

Dec 29th 2004 | BECKLEY
From The Economist print edition

They could be in Baghdad or Kabul

GARLAND DANIEL looks stressed, busy and has black rings under his eyes. At the Raleigh County Sheriff Department's office in Beckley, West Virginia, this deputy works regular four-day, ten-hour shifts. On an easy day in the small coal-mining town that's fine, he says. But it is a bad Friday with various highway collisions, a weekend Christmas parade and a fugitive on the loose. And his partner, along with another two of Raleigh County's 47 deputies, is off serving in Iraq. “It's tough”, admits the uncomplaining Deputy Daniel, “but we're doing the best we can.”

Beckley is not the only town where the sheriff is short of men. Whenever the American army is at war, it calls up deputies who are young and fit. No national figure exists for the total number of deputies among the 140,000 American troops in Iraq. The Los Angeles County Sheriff's Department alone has sent more than 150 people. But much of the strain is probably taken by smaller departments, like those in West Virginia, where one-third of its 55 sheriff departments are under-staffed because of the conflict.

Melissa McClung of the West Virginia Sheriffs' Association points out that many of the state's sheriff departments are tiny; so losing one deputy in a six-man office hurts. In June the state introduced the Law Enforcement Re-employment Act allowing counties to hire retired deputies and police officers to replace people serving in Iraq. Initially the employment period was only 90 days; it is now two years.

Raleigh is still soldiering on without getting new people. Two hours north-west of Beckley, Lieutenant Bill Keck at the Cabell County Sheriff Office has had to draft in two retirees—a 60-year-old and a 55-year-old—to replace the three deputies who have gone to Iraq. The young deputies called up by the army—first in Afghanistan then Iraq—were the cream of the crop, he says: the young and fit ones who would do evening shifts and patrol the rural areas.

Lieutenant Keck balked at putting the retirees on the roads. The eyes of a 60-year-old, he reasons, aren't as good at night; nor could they “chase someone over the hill and down to the brim, like a 30-year-old could.” Instead the older men are perfect for court-bailiff work, mental-hygiene orders and writing reports—grunt work that many young deputies perform when starting out.

For the retirees, this arrangement works well. Samuel Schneider, a relieving deputy in his mid-fifties, feels honoured to help out the Cabell County office. It's his civic duty, he insists.

Support our boys

Such patriotic sentiments are common in rural West Virginia. The local fast-food chains hang signs

outside touting support for their troops. Beckley finds room for a Raleigh County Veterans Museum. The Christmas parade carried plenty of kind messages to the troops. Deputy Daniel plays down his fatigue also and says people here stand behind the troops. “Working hard is the least we can do,” he says.

Even so, some West Virginian residents can get feisty when their calls are ignored. In the foyer at the Raleigh County office, an elderly schizophrenic man insists on being helped. The officer on duty listens sympathetically, but, with a fugitive to catch, he can't send a deputy out his way. Later he confides that the man is demented and keeps on hearing kids knocking on his trailer. But the department does not have enough men even to go through the motions of helping the old man.

The other worry, naturally, is that criminals will realise that there are fewer people to chase them. Danny Moore, the sheriff of Raleigh County, admits that he keeps quiet about his staff shortage for fear that it will alert his prey. West Virginia, like many other rural states in the region, has a burgeoning problem with “crystal meth” labs. The state has tried to crack down, increasing the penalties for manufacturers and distributors of the drug.

But first you have to catch the criminals. Meanwhile the number of drug-fuelled petty thefts and crimes is also on the rise; that makes life more dangerous for deputies on the road, especially if they now have to patrol alone. Even Deputy Daniel admits, “We all feel better having your partner watching your back.”

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Correction: Puerto Rican politics

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In our story on Puerto Rico ("The ties that bind", December 4th), we transplanted Judge Daniel Dominguez, who was dealing with the disputed governor's race, to Boston. His court in fact is in the dependency; an appeal was being heard in Boston. We should also have made clear that Aníbal Acevedo Vilá's 3,880-vote lead included 28,000 disputed ballots.

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China and Latin America

Magic, or realism?

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From The Economist print edition

EPA

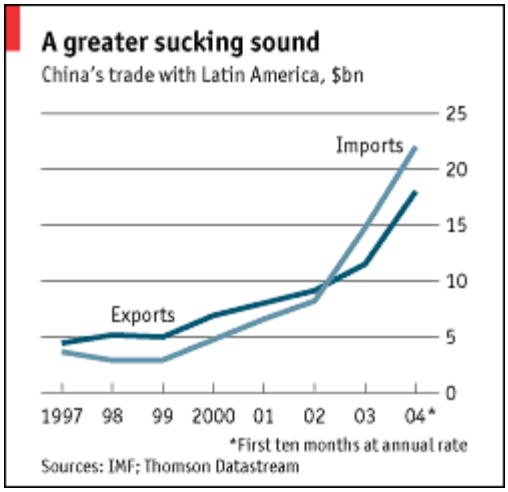
China and Latin America can help each other, though some claims made for the "China effect" are more fantasy than fact

IN SOUTH AMERICA, the Spanish expression *cuento chino*—literally a "Chinese story"—means a fairy tale or a fantasy. Is it too harsh a way to describe the recent talk about a blossoming trans-Pacific partnership, linking a confident, commodity-hungry China with a continent in search of new friends?

As fantasies go, this is certainly a powerful one, and it does have some basis in hard reality. But an element of make-believe is never absent either. On a visit to Beijing in December, Venezuela's President Hugo Chávez (above, left) told some tallish tales about the revolutionary spirit linking his nation and his hosts. Unveiling a statue of the (quite conservative) Simón Bolivár, who led Venezuela to independence, Mr Chávez called the anti-colonial hero a soul-mate of Mao Zedong, and noted the "great similarities" between the revolutions they led. To mark this brotherhood, Mr Chávez added, China would invest heavily in Venezuela's oil sector, while bilateral trade would hit $3 billion in 2005, more than double the 2004 figure.

None of this changes the fact that the United States will remain the biggest customer for Venezuelan oil. But the heady atmosphere of the Venezuelan leader's Chinese Christmas was only the latest in a series of spectacular displays of Sino-Latin solidarity. China's President Hu Jintao visited Argentina, Brazil and Chile in November—and promised to lay out tens of billions of dollars on improving the region's infrastructure. He also vowed that China's imports from Latin America—already showing an impressive

rise (see chart)—would grow even faster; and he added Argentina and Brazil to China's list of approved tourist destinations. In Peru, meanwhile, tour-guides at Inca sites are brushing up their Chinese in anticipation of a huge influx of visitors. What did Mr Hu get in return? Most obviously, a big diplomatic concession: his three host countries agreed to recognise China as a market economy, a move which makes it harder to bring anti-dumping charges.



All over Latin America, meanwhile, there have been eager predictions of a massive boost to employment and economic growth, thanks to a new benefactor who could supplant, at least in part, the role played by American-dominated financial institutions and America itself.

On inspection, the agreements signed by Mr Hu on his tour do not quite amount to the money on the table for railways, housing and oil exploration which some Latin Americans expect. What China's president signed were “letters of intent” for work in these areas: “the first two minutes of a two-hour movie,” says Juan Llach, an economics professor at IAE Austral University in Buenos Aires.

The film could still be worth watching. It is true that the economies of China and South America are in some ways complementary. With galloping GDP growth and a scarcity of arable land, China's appetite for natural resources and farm products seems insatiable, and South America has both. China's imports from the region, primarily soy products and minerals, have nearly trebled since 2002.

If China is now offering to boost the continent's infrastructure, that reflects something more than just philanthropy or diplomatic opportunism. As many a European coloniser found, procuring goods from distant lands is harder when basic facilities—ports, roads, docks—are inadequate. If Latin America's are improved, China can buy more and faster.

The Latin countries, naturally, are looking forward to the promised spike in trade: an “understanding” between China and Argentina calls for a rise in Argentine exports from $3 billion to $7 billion over five years. And almost any big foreign investment would be a boon to Argentina, abandoned by capital markets after a default three years ago.

But despite the triumphant handshakes between Mr Hu and his Latin counterparts, nobody is sure whether China's financial assistance will really amount to investment in the ordinary sense. According to Miguel Broda, from an Argentine think-tank, Estudio Broda, the ultimate deals are unlikely to take the form of direct capital outlays by Chinese companies, on the lines of Victorian Britain's railway-building ventures in Argentina. Instead, China may offer a “tied loan”, at very low interest rates, for projects whose execution is then assigned to Chinese state enterprises. Some way would have to be found to bypass an Argentinian law that mandates open bidding for state contracts.

Is it worth the trouble? Already, some doubts have been aired. As Andres Cisneros, a former deputy foreign minister of Argentina, has argued forcefully, “we would remain indebted for decades and decades, to pay back loans tied to direct awards to foreign corporations chosen by mere government functionaries [...when] other businesses could have done the same job on better terms.”

Even if China's commitment does take the form of real capital investment, some see it as a mixed

blessing. As any anti-colonialist can tell you, investment that focuses heavily on extracting raw materials can be frustrating for host governments that want to boost skills and employment, and to add value locally—even though it hauls in some tax and foreign currency.

China, of course, needs raw materials for its own value-adding industries: hence the fears of some Latin American trade unionists, and industrialists, that a closer relationship with the Chinese will simply help them to compete in the world market in manufactures. Among the Andean states, there are fears that their textile sales to America will lose out to China's as the world textile trade deregulates this year.

Brazil in particular could be compromised by Chinese competition in sectors such as cars, according to a recent Inter-American Development Bank report. Sensing such a risk, Brazilian industrial groups nipped in the bud some recent discussions about a Brazil-China free-trade agreement. Many Latin Americans feel their hand would be strengthened if they bargained with China as a block. In the words of Felix Peña, an Argentine ex-minister: “They can just take advantage of the divisions if we are not working together.”

As Mr Llach sees things: “Together, perhaps in exchange for market-economy recognition, we could have sold them not just soybeans but oil in bottles to sell in the supermarket.” Putting oil in bottles sounds a great deal better than conjuring genies out of lamps.

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Grenada

Any port in a storm

Dec 29th 2004 | ST GEORGE'S, GRENADA
From The Economist print edition

Desperate to rebuild after Hurricane Ivan, Grenada, too, turns to China

AP

Still terrible: Ivan's trail

JUST before Christmas, five cruise ships docked at the capital of this tiny island and disgorged their passengers. As they strolled along the pretty seafront, the tourists found themselves rubbing shoulders with workers rebuilding a wrecked fire station, and staring at historic churches which still gape roofless at the tropical sky.

Four months after Hurricane Ivan left its trail of mayhem, Grenada is still struggling to get back on its feet. Although—like many of its neighbours—it has sold itself to western trippers as an idyllic, problem-free retreat, it cannot now hide its scars. A similar dilemma, in far more acute form, will soon be faced by communities around the Indian Ocean.

Grenada reopened for cruise traffic in November, but life is far from back to normal. Most islanders have nailed back the corrugated-iron roofs ripped off by the storm; others still live under dripping tarpaulins, or bunk with relatives. The sunny smiles are back, but for some the stress and trauma cut deep; a jump in the death rate among the elderly is widely blamed on a world turned upside-down. The looting has stopped, but a government initiative called “Operation Yuletide”, launched in December, was about stepping up police patrols, not delivering Christmas gifts.

Almost every school building is badly damaged. Wrecked private homes accounted for half the financial losses from the storm—very roughly estimated at $800m. Only a third of the housing stock was insured. Hotel tourists, far more significant economically than cruise trippers, are few. Just over 40% of the island's hotel rooms are back in service, and work on the rest is under way—but the peak December to April season promises few pickings this year. Nutmeg exports, the agricultural mainstay, will be down by 90% in 2005. Some damaged trees may recover. With care, replanting can produce fruit in from three to five years. But nurturing young plants is tough work, and returns are slow. With the construction industry offering jobs, many may abandon the land.

Aid donors have been quite generous. In September, an emergency relief effort was launched by Caribbean neighbours and independent aid organisations. For longer-term help, America in November pledged a handsome $40m in grants to support housing, farms and schools. Multilateral agencies chipped in too.

But even here, strangely enough, relations with China are as much on people's minds as they are

in Latin America as a whole (see article). That is partly because one of the island's biggest benefactors, up to now, has been Taiwan. Since Ivan, it has doled out $4.7m in emergency grants, and promised another $40m to rebuild a wrecked (and uninsured) sports stadium. Keith Mitchell, the prime minister, badly wants this project completed in time to host matches for the 2007 cricket world cup, an important if short-lived tourist attraction. Grenada has hitherto been one of Taiwan's 26 staunch remaining allies; in most recent years, Taiwan has been the largest bilateral aid donor, and with $20m in debt, it is also the island's leading bilateral creditor. Mr Mitchell often showed his gratitude by backing Taiwan at the UN.

But he has recently made a dramatic shift. He left unexpectedly on December 10th for Beijing, explaining on his return that he had been “disappointed” with the Taiwanese for failing to be as generous as they should have been. He stopped short of withdrawing recognition from Taiwan—but claimed to have won an impressive aid package from China: help with the stadium, the hospital, scholarships, housing and agriculture. Yet as sceptics noted, confirmation and details of the package have been slow to emerge.

Has Mr Mitchell really been so successful at manipulating a country at least 10,000 times more populous than his own? It is easy to see why he was tempted: last March, when neighbouring Dominica switched recognition to Beijing, its reward was an aid package worth $122m. That would build a lot of fire stations, and cricket grounds.

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Pakistan's president

Still in uniform, but now in a bind as well

Dec 29th 2004 | LAHORE
From The Economist print edition

AP

Pervez Musharraf refuses to honour his promise to quit the army

Get article background

UNDER the leadership of General Pervez Musharraf, much good has been accomplished in Pakistan since September 11th 2001. Formerly a regional pariah, arming Islamic fanatics in Afghanistan and Kashmir, the country is considered a staunch ally by America in its fight against terrorism. This change was wrought by Mr Musharraf, who was recently rewarded with a trip to Washington and lashings of aid money. If only the general's domestic supporters felt similarly. Last week, the Muttahida Majlis-i-Amal (MMA), a coalition of Islamist parties that had supported Mr Musharraf, held protests to demand his resignation. As the new year loomed, more demonstrations were planned, and the MMA threatened to derail parliament. Why the change of heart?

Put simply, the clerics do not like Mr Musharraf's clothes. One year ago, their support allowed him to legitimise his dictatorship, but it came with a condition: by the end of 2004, Mr Musharraf had to honour his promise to peel off his uniform and become a civilian. And this, in a recent TV interview, and to the surprise of no one, Mr Musharraf refused to do.

Assuming that Mr Musharraf does not have a change of heart—which no one expects—he may attempt to silence the clerics by seeking friends elsewhere. This is a tactic he understands well. Mr Musharraf first patronised the MMA as a means to quash Pakistan's boisterous secular parties. By assisting the clerics on their campaign trail, he ensured that no opposition party won a majority in an election in 2002, the first since his coup three years before. There are already signs that Mr

Musharraf is changing his political partners. His American backers would like him to build bridges with the mainstream Pakistan People's Party (PPP), led by an exiled former prime minister, Benazir Bhutto.

This seemed to come closer in November when Mr Musharraf released Ms Bhutto's husband, Asif Zardari, from prison, where he had languished for eight years without trial. Soon after, Mr Zardari was given a hero's welcome in his home province, Sindh. But when he set off to tour Punjab, the stronghold of the pro-Musharraf Pakistan Muslim League (PML), Mr Zardari was rearrested, and his protesting supporters were thrashed mercilessly by Punjabi police. Mr Zardari was freed the following day, and promptly announced that he would instead take his campaign to the two northern regions, North-West Frontier Province and Balochistan, which are controlled by the MMA.

The difficulty for Mr Musharraf is that the PPP—unlike the stern clerics—is more popular than the PML. By letting the PPP campaign freely, he could ensure his own political extinction at the next election. Then again, if he turned against the PPP, it might form an alliance with the MMA and oppose his bid to remain army chief.

Prior to this bind, Mr Musharraf had enjoyed rather a good year. His deal with the MMA ended a year of parliamentary gridlock, and swiftly led to Pakistan being readmitted to the (formerly British) Commonwealth, after four years out in the cold. The economy maintained a growth rate of over 6%. Having narrowly survived two assassination attempts, Mr Musharraf took decent strides against Islamic terrorist groups. Several mid-level al-Qaeda agents were netted in Pakistan. And if the army's assault on the tribesmen of northern Waziristan did not haul in the terrorist catch that was promised, it appeared to raise the president further in George Bush's regard. Mr Musharraf won more plaudits abroad by installing Shaukat Aziz, an able technocrat, as prime minister, and by supporting initiatives to improve relations with both India and Afghanistan.

But, beyond the politics of central government, trouble is brewing. In Balochistan, a little-known group called the Baloch Liberation Army (BLA) has claimed responsibility for several ambushes on security forces in which at least two dozen paramilitary policemen have died. The BLA's grievances lie in a dispute between the government and local tribal leaders over the division of riches earned by Balochistan's gas field. With violence in Waziristan also continuing, as well as peace talks with India, this is no time for Mr Musharraf to become lost in political wrangling.

The great irony of Mr Musharraf's predicament is that when he seized power from a discredited democratic leader, Nawaz Sharif, he was welcomed enthusiastically in Pakistan and condemned abroad. Today, he has won the support of the international community; no foreign ally has made much fuss about his refusal to turn civilian. But he is vulnerable and increasingly isolated at home.

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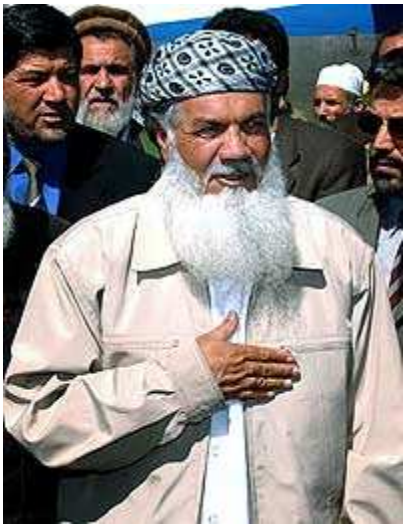
Afghanistan

Almost no warlords

Dec 29th 2004
From The Economist print edition

Hamid Karzai names a new government

AP



Khan: from warlord to water minister

"FORGET about warlords," said Hamid Karzai, Afghanistan's leader, when asked to comment on the cabinet he appointed last week. And with justification: Afghanistan's new government, named after a thumping election win for Mr Karzai in October, looked fairly capable and clean. It was dominated by technocrats, reflecting a new rule that ministers must be university graduates. Only one of the country's powerful warlords, Ismail Khan, made the cut—and he might claim to be a retired warlord.

The team looked well-balanced ethnically—no small matter in a country recovering from a ravenous civil war—but not to the exclusion of other criteria. Of 27 ministers, 11 are from the Pushtun tribe, Afghanistan's biggest and Mr Karzai's own. Seven are Tajiks, but mostly not from the Tajik-dominated Northern Alliance, a grouping of warlords that wielded power in the previous government, in reward for its role in defeating the Taliban. Yunus Qanuni, the former education minister, and Mr Karzai's main challenger in the election, was a notable exclusion. He has since vowed to challenge Mr Karzai in parliamentary elections scheduled for April, but not expected until the late summer.

Given that the parliament is supposed to approve the new cabinet, it could yet be wrecked. But the warlords Mr Karzai has dispensed with, scattered in fiefs across the north and centre of the country, have so far kept a dignified silence. Some will be watching the performance of Habibullah Qaderi, who heads a new counter-narcotics ministry. Emboldened by his election win, it seems, Mr Karzai has asserted himself to an uncharacteristic degree: he has said that ministers who do not perform well will be sacked—an extraordinary notion in Afghanistan.

Afghans were more interested in who was left out of the cabinet than in who got in. Among several outgoing tyrants, Mohammed Fahim, the former defence minister and commander of the Northern Alliance, is a powerful omission. General Rashid Dostum, an Uzbek strongman of the north, was another no-show, despite his success in winning around 10% of the vote in October. Instead, the defence job that both men craved went to Abdul Rahim Wardak, a fan of Mr Karzai, and a friend of the United Nations in its efforts to demobilise Afghanistan's militias.

Alone among the men with militias, Ismail Khan, who until recently ran western Afghanistan as his own, was given the job of minister for water and energy. Mr Khan was promised a cabinet seat when he agreed to step down as governor of Herat last year. A disturbing exclusion was Ashraf Ghani, the former finance minister. Mr Ghani ran a lean and ambitious ministry, but his refusal to compromise with bickering colleagues made him enemies.

Mr Karzai's choices have, by and large, been applauded by a donor community that views the president as crucial to Afghanistan's recovery. But the president's work is not done yet. Before Mr Karzai's government can truly be said to run Afghanistan, the militias must be disarmed and a state of general lawlessness, fuelled by an exploding drug trade, must be tamed. These things will take time. Only then will poor Afghans applaud too.

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Employing the Indian poor

Guaranteed to disappoint

Dec 29th 2004 | DELHI
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A job promise that may be both costly and hollow

Get article background

OF THE many promises made by India's governing coalition, led by the Congress party, in its "common minimum programme" last May, one stood out for its scope and ambition. This was the "immediate" enactment of a legal "employment guarantee". One member of every poor and lower-middle-class household would be entitled to at least 100 days of work at the minimum wage on public-works projects. On December 21st, the "Employment Guarantee Act" (EGA) was duly tabled in parliament. Neither the scheme's most virulent critics nor its architects and supporters are pleased with the contents.

On one side are those who see the EGA as wasteful and unaffordable, prone to massive and corrupt "leakage" and unlikely either to ease poverty or to produce useful assets. They see it as the biggest of the prices paid by the government's economic reformers—such as the prime minister, Manmohan Singh—to the leftist parties on whose parliamentary support Congress relies. On the other are those who see the government's draft legislation as a dilution to the point of meaninglessness of a grand vision that would have lifted millions out of poverty and done much to fix India's woeful infrastructure. Both sides have a point.

Estimates of the annual cost of the plan, if implemented nationwide, are 250 billion-400 billion rupees ($5.7 billion-9 billion), depending on the number of people expected to apply for work. That is between 1% and 1.6% of GDP, a huge sum for a country where the combined deficits of state and central governments have hovered around 10% of GDP for seven years. The government is bound by law to try to reduce the deficit. This will hardly help.

Well-founded doubts also exist about whether such schemes really reach the 250m-300m Indians who live below the poverty line. Pessimists expect much of the money to vanish into the pockets of corrupt officials, employing millions of "ghosts" on invisible projects. Many of the less ghostly beneficiaries would be neither poor nor jobless.

Officials at the Ministry of Rural Development, which produced the draft law, do not dismiss these charges out of hand. But they point out that the plan is initially to be introduced in only the poorest 150 of India's 593 districts, before being extended nationwide. Since it will replace existing poverty-alleviation programmes, the extra cost will be minimal. As to the risk of "leakage", they counter that, by vesting the power to select and monitor projects in the lowest level of elected authority—village councils—they hope the poor themselves will police corruption. Such "empowerment", they argue, is one of the plan's main benefits.

The government has come under equally fierce fire from the left and from some of the EGA's staunchest advocates. They worry that the plan has been weakened in crucial respects. In

particular, there is no fixed time limit for it to be extended nationwide. Nor is there a reference to the minimum wage under the scheme—allowing it to be wrecked at any time by the setting of an arbitrarily low rate. Thirdly, they complain that the beneficiaries of the scheme are to be picked by reference to official poverty data, out-of-date and unreliable (the 150 districts, for example, are not necessarily the poorest). This jettisons one of the plan's main attractions: that it should be self-selecting—only those who need to, it is argued, will take work at the minimum wage.

All of this fuels the suspicion that some leading figures in the government in fact quietly agree with the EGA's opponents. Faced with the political impossibility of axeing it, they are subjecting it to a slow death by strangulation.

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India

Charming

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A bid to ban snake-charming causes unrest

AN IRATE bunch of villagers recently marched on the legislature of India's eastern state of Orissa, bearing reptiles. Earlier they had threatened to release 5,000 snakes into the halls of the state assembly—cobras, mostly—if their demands were not met. The men were snake-charmers, that hoary cliché of a timeless India. On the appointed day, they aired their grievances and brandished their snakes; police defended the premises; everyone went home.

Life has never been easy for the itinerant snake-charmer, who makes his money with a bottle-gourd flute and a basketful of swaying, hooded cobras. But lately his lot has got worse, since forestry officials became serious about a law that has forbidden the capture of snakes since 1972. Initially the ban served to end the mass export of snakeskins. As a side-effect, snake-charming was outlawed. In recent months, arrests have become common, despite scant evidence that the median charmer's take of seven snakes per year poses any threat to wild populations.

Animal-welfare activists are leading the charge. They say the charmers' crude method of defanging snakes amounts to torture. Snake-charmers protest: they claim to love the animals and certainly depend for their livelihoods upon the snakes' good health. A study sponsored by the Wildlife Trust of India finds that 73% of the men born into snake-charming families earn their primary income through snake-charming. Those who leave the trade tend to go on to make even less money.

But the dispute is not entirely economic. The way of life surrounding the capture and care of serpents is complex and hereditary; snake-charmers are invariably caste-mates. In Orissa they are the Sapuakelas, an impoverished and ritually degraded group. Orissa's government has hitherto disdained caste-based politics; that may be changing.

Moreover, animal welfare has always represented a force in Indian politics. It has often been abused; the rights of the cow, for instance, are routinely cited as means to punish troublesome Muslims. Yet science is on the snake-huggers' side: research suggests the life span of a roughly defanged snake is in fact miserably curtailed.

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Indonesia

Kalla's coup

Dec 29th 2004 | JAKARTA
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A new leader for Golkar

UNTIL December 19th, a year of great political excitement in Indonesia, caused by landmark legislative and presidential elections, looked to be calming down a bit. Then the political map was redrawn at a stroke, when Golkar, the largest party in parliament with 128 of 550 seats, elected a new leader.

The party congress voted resoundingly to remove Akbar Tandjung—who shot his bolt by allying himself with the former president, Megawati Sukarnoputri—and replace him with Jusuf Kalla, the country's new vice-president. That signalled the end of an opposition coalition of Golkar and Miss Megawati's Indonesian Democratic Party of Struggle, which together controlled 266 of the seats in parliament.

Whether this will automatically bring Golkar into a loose alliance of smaller nationalist and popular Islamic parties, led by President Susilo Bambang Yudhoyono, is unclear. In theory, it should: Mr Kalla has said that he believes the logical place for Golkar is as a government supporter, albeit one that is ready to question.

As party chairman, Mr Kalla wields enormous power in determining party platforms and—crucially for 2005, when provincial and district-level governments will for the first time be directly elected—electoral candidates. Anyone wanting to move ahead in Golkar will have little choice but to toe his line. A former car dealer from Sulawesi, Mr Kalla has moved swiftly to consolidate his position. The party's top brass has been replaced, with the parliament speaker, Agung Laksono, made deputy chairman. Mr Kalla also says that he will reshuffle the leaders of the many parliamentary commissions that Golkar controls.

Mr Kalla may not have things all his own way. Golkar, which formerly gave a veneer of legitimacy to Indonesia's long-entrenched tyrant, General Suharto, is an organisation famed for infighting. But, overall, most of the party's factions seem likely to support Mr Yudhoyono most of the time, at least for the next couple of years. They are keen to rid themselves of a well-deserved reputation for opportunism and self-service, won in the days of Suharto. Golkar's ultimate goal is to win the presidency in 2009. Who the party's candidate will be remains unclear. Mr Kalla's ambitions are vague. He professes total loyalty to the president. Yet many call him the most powerful person in Indonesia. He has, after all, used a largely ceremonial position to accrue something close to prime-ministerial powers. Now he has the nation's largest party under his belt.

Several factors work against Mr Kalla, however, should he reveal presidential ambitions. His age—he will be 67 in 2009—may discourage some voters. Then there is the fact that he is not Javanese. Many Indonesians, and Golkar bigwigs in particular, are tribalists at heart and unlikely to back someone who does not come from the island home of more than half of Indonesia's 220m people. Thirdly, Mr Kalla tends to speak his mind, and this bluntness puts off many Indonesians,

especially, it is said, those of Chinese descent.

For now, the political realignment looks like working out for Mr Yudhoyono rather well—even if it augurs yet more political uncertainty in Indonesia for some time to come.

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Iraq

When deadly force bumps into hearts and minds

Dec 29th 2004 | BAGHDAD, MOSUL, RAMADI AND TAL AFAR
From The Economist print edition

AFP

With elections due in a month, our "embedded" correspondent reports on how the American army is failing to persuade Iraq's sour Sunni minority to co-operate

THERE is only one traffic law in Ramadi these days: when Americans approach, Iraqis scatter. Horns blaring, brakes screaming, the midday traffic skids to the side of the road as a line of Humvee jeeps ferrying American marines rolls the wrong way up the main street. Every vehicle, that is, except one beat-up old taxi. Its elderly driver, flapping his outstretched hand, seems, amazingly, to be trying to turn the convoy back. Gun turrets swivel and lock on to him, as a hefty marine sergeant leaps into the road, levels an assault rifle at his turbanned head, and screams: "Back this bitch up, motherfucker!"

The old man should have read the bilingual notices that American soldiers tack to their rear bumpers in Iraq: "Keep 50m or deadly force will be applied". In Ramadi, the capital of central Anbar province, where 17 suicide-bombs struck American forces during the month-long Muslim fast of Ramadan in the autumn, the marines are jumpy. Sometimes, they say, they fire on vehicles encroaching within 30 metres, sometimes they fire at 20 metres: "If anyone gets too close to us we fucking waste them," says a bullish lieutenant. "It's kind of a shame, because it means we've killed a lot of innocent people."

And not all of them were in cars. Since discovering that roadside bombs, known as Improvised Explosive Devices (IEDs), can be triggered by mobile telephones, marines say they shoot at any Iraqi they see handling a phone near a bomb-blast. Bystanders to an insurgent ambush are also liable to be killed. Sometimes, the marines say they hide near the body of a dead insurgent and

kill whoever comes to collect it. According to the marine lieutenant: “It gets to a point where you can't wait to see guys with guns, so you start shooting everybody...It gets to a point where you don't mind the bad stuff you do.”

Since September 1st, when the battalion's 800 men were deployed to Ramadi, they have killed 400-500 people, according to one of their senior officers. A more precise estimate is impossible, because the marines rarely see their attackers. When fired upon, they retaliate by blitzing whichever buildings they think the fire is coming from: charred shells now line Ramadi's main streets. “Sometimes it works in the insurgents' favour,” admits Rick Sims, a chief warrant officer. “Because by the time we've shot up the neighbourhood, then the guys have torn up a few houses, they're four blocks away, and we just end up pissing off the locals.”

These brutal actions are what the marines have been trained for. They are superb fighters, among the best infantrymen of the most formidable force ever assembled. They are courteous—at least to their friends—and courageous. Long will this correspondent remember the coolness with which one teenage marine flicked away his cigarette and then the safety-catch on his rifle, as a sniper's bullet zipped overhead. Since arriving in Ramadi, some 20 marines have been killed and 160 wounded by suicide bombs and IEDs, in ambushes and by mortars. Many were on their second seven-month tour of Iraq and, after a seven-month break to retrain and refit, can expect to spend next Christmas there too. Yet their morale was high.

Neither are they, nor any of the American forces accompanied during three weeks in Iraq, short of ingenuity. In Ramadi, the marines have rewritten their training manual for urban warfare. Having been taught to seize towns methodically, block by block—a method more appropriate to Stalingrad than Baghdad—they have learned to patrol at high speed and on foot, sending snipers on to the rooftops ahead, along streets littered with bomb debris and daubed with hostile slogans: “Slow Daeth [sic]” and “America down”.

In Fallujah, 40 miles (64km) east of Ramadi, the marines who survived the fierce assault on the town in November have a sardonic acronym for the skills it taught them: FISH, or Fighting In Someone's House. FISH involves throwing a hand grenade into each room before checking it for unfriendlies, or “Muj”, short for mujahideen, as the marines call them.

America's new war toys are on impressive display. In increasingly stormy northern Iraq, a lightly-armoured troop-carrier, the Stryker, is delivering infantrymen to the battlefield in numbers and at speeds unprecedented. As the Strykers race along, their computers display constantly-updated aerial maps of the surrounding area: a digitising of warfare that has made it virtually impossible for any ally of America to fight high-intensity battles at its side. The army's logistical support, needless to add, is superb. America's 138,000 soldiers and marines in Iraq sleep in smart heated cabins and enjoy tasty food, excellent gymnasiums and internet access.

Win a war, lose a peace

Yet armies can be good at war-fighting or good at peacekeeping but rarely good at both. And when America's well-drilled and well-fed fighters attempt subtler tasks than killing people, problems arise. At peacekeeping, peace-enforcing or policing, call it what you will, they are often inept. Even the best of them seem ignorant of the people whose land they are occupying — unsurprisingly, perhaps, when practically no American fighters speak Arabic. And, typically, the marine battalion in Ramadi has only four translators. Often American troops despair of their Iraqi interlocutors, observing that they “are not like Americans”.

American marines and GIs frequently display contempt
for Iraqis, civilian or official. Thus the 18-year-old Texan

soldier in Mosul who, confronted by jeering schoolchildren, shot canisters of buckshot at them from his grenade-launcher. “It's not good, dude, it could be fatal, but you gotta do it,” he explained. Or the marines in Ramadi who, on a search for insurgents, kicked in the doors of houses at random, in order to scream, in English, at trembling middle-aged women within: “Where's your black mask?” and “Bitch, where's the guns?” In one of these houses was a small plastic Christmas tree, decorated with silver tinsel. “That tells us the people here are OK,” said Corporal Robert Joyce.

According to army literature, American soldiers should deliver the following message before searching a house: “We are sorry for the inconvenience, but we must search your house to make sure you are safe from anti-Iraqi forces [AIF].” In fact, many Iraqis are probably more scared of American troops than of insurgents.

Whether or not the insurgency is fuelled by American clumsiness, it has deepened and spread almost every month since the occupation began. In mid-2003, Donald Rumsfeld, America's defence secretary, felt able to dismiss the insurgents as “a few dead-enders”. Shortly after, official estimates put their number at 5,000 men, including many foreign Islamic extremists. That figure has been revised to 20,000, including perhaps 2,000 foreigners, not counting the thousands of hostile fighters American and British troops have killed; these are the crudest of estimates.

With insurgents reported to be dispensing criminal justice and levying taxes, some American officers say they run a “parallel administration”. Last month in Mosul, insurgents are reported to have beheaded three professional kidnappers and to have manned road checkpoints dressed in stolen police uniforms. In Tal Afar, farther west, insurgents imposed a 25% cut in the price of meat.

American military-intelligence officers admit their assessments are often little better than guesses. They have but a hazy idea of when and by whom the insurgency was planned, how many dedicated fighters and foreign fighters it involves, who they are, or how much support they command. The scores of terrorists who have blown themselves up in Iraq over the past year are invariably said to be foreign fanatics. But this has almost never been proved.

In bold contrast to his masters in Washington, General George W. Casey Jr, the commander-in-chief of coalition forces in Iraq, credits foreigners with a minimal role in the insurgency. Of over 2,000 men detained during the fighting in Fallujah, fewer than 30 turned out to be non-Iraqi. In Ramadi, the marines have detained a smaller number of foreigners, including a 25-year-old Briton two weeks ago, who claimed to be pursuing “peace work” but whose hands were coated with explosives. Pleased to find an enemy who understood English, marines say they queued up to taunt him; one told him he would be gang-raped in Abu Ghraib.

Peering into the dark

It is impossible to measure the insurgents' power with much accuracy. Official American reports are absurdly sunny, prone to focus on deliveries of footballs to Baghdad's slums rather than attacks on army patrols. American figures for reconstruction projects are often exaggerated. A huge hitch is that diplomats and non-Iraqi journalists can travel freely hardly anywhere in Iraq outside the Kurdish north for fear of being kidnapped and killed.

On January 30th, Iraqis are supposed to take a grand stride towards unfettered self-rule when they elect a transitional parliament that in turn will endorse a new government. Its legitimacy will depend to a large degree on the overall turnout and the geographical spread of the voting. In the predominantly Sunni Arab areas, which are overwhelmingly where the insurgency has taken root (and where this report is focused), most potential voters seem unlikely—out of conviction or fear—to go to the polls. (The Sunnis make up about a fifth of Iraqis; the Kurds, who are decidedly keen to vote, are similar in number, while Shia Muslims, who are eager to rule the roost after centuries under Sunni control, comprise about 60%.)

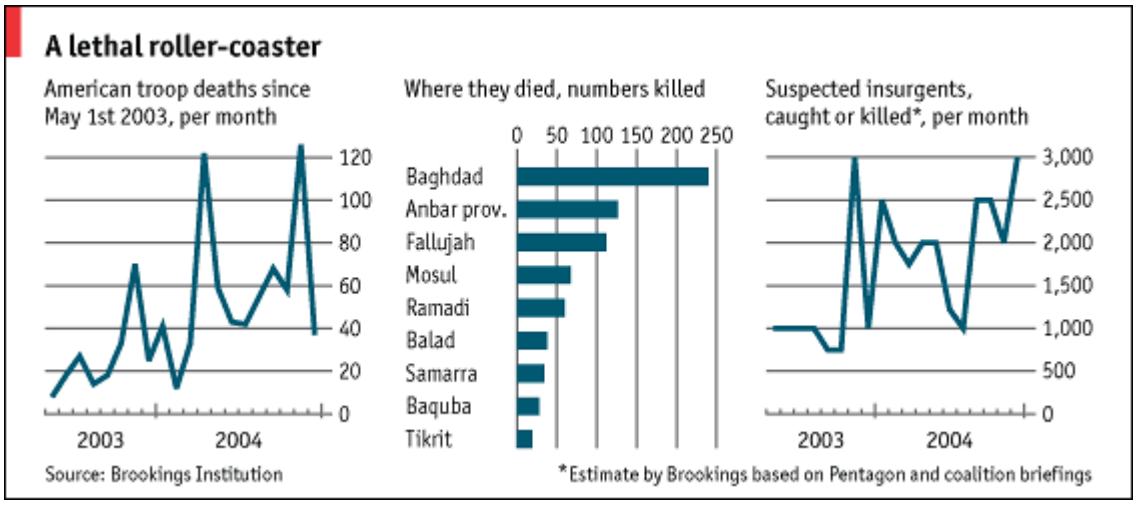
According to official American reports, the insurgency is relatively concentrated: 14 out of Iraq's 18 provinces are said to see fewer than four attacks on coalition forces per month. But this includes several potentially volatile Shia provinces, like Dhi Qar and Maysan, parts of which are run by the still-armed Mahdi Army militiamen loyal to Muqtada al-Sadr, the Shia cleric who made mayhem between April and August. Only four provinces—Baghdad, Anbar, Salah ad Din and Ninewa—see many more attacks. But as they include the capital city, the third-biggest city (Mosul) and the homeland of most of the country's Sunnis, they are no small problem: the equivalent in the United States might be an insurgency raging in those states that voted Democrat in November, and sporadic lawlessness in many of the rest.

More happily, since the carnage in Fallujah—now deserted and substantially demolished, though still violent—insurgents no longer control any town outright. The Americans estimate that around 1,600 of the enemy were killed in the battle to retake the town; several times that many are thought to have fled, mostly to Baghdad and the northern parts of Babil province.

It is unclear how much this really set back the insurgents. The many spectacular rebel attacks since the recapture of Fallujah show that the Americans have not, as their officials claim, “broken the back of the insurgency”. But it has at least inconvenienced their enemy. Among the treasures found in the town were 400 caches of arms and an ice-cream van kitted out as a mobile car-bomb workshop. In the last three weeks of November, when the battle began, the incidence of car bombs across Iraq dipped from 44 a week, to 33, then 22.

In Ramadi, as in many troubled places, the assault on Fallujah was marked by a sudden spike in violence, followed by a relative lull. After a bloody September and October—when the marines faced up to nine IEDs a day and fought street battles with, they reckon, scores of insurgents at a time, and when most of Ramadi's inhabitants fled—the past month has yielded roughly one IED every few days, and a handful of serious ambushes.

This may be because night-time temperatures have fallen to freezing, or because Ramadi's marines were reinforced by an army battalion. But it may also reflect a shift in the insurgency's character.



Midway through the past year—in July, in Ramadi—the insurgents began increasingly to seek softer targets, especially Iraqi security forces, Iraqis working for coalition forces, American supply convoys and the oil infrastructure. In November, one in four American supply convoys was ambushed. Three months ago, American officials overseeing reconstruction in Mosul were lobbied by 30 Iraqi contractors in an average day; now, they struggle to find even one brave enough to accept their dollars. A low helicopter flight over the Kirkuk oilfield, Iraq's second-biggest, presented a scene from the Book of Revelation: each of seven oil wells was marked by a tower of orange flame, meeting in a canopy of dense black smoke.

Starker still is the cost in lives. In the first nine months of 2004, 721 Iraqi security forces (ISF) were killed, according to figures compiled by the Brookings Institution, a Washington think-tank; in October, the figure was 779. The surge of violence in Mosul at the start of the Fallujah campaign has not abated; the city's police are the main victims. On November 10th and 11th, rebels devastated almost all the city's police stations, after the 4,000-strong police force had fled. Around 200 dead policemen and ISF members, usually beheaded, have since been dumped about the city. Its American contingent is also under unprecedented attack. On December 21st, at lunchtime, 18 Americans were killed by a suicide bomber in an army mess-tent in Mosul.

Barely six months ago, Mosul was one of the most tranquil spots in Iraq. Now it is one of the most violent, and least policed. It may be no coincidence that, until last January, around 20,000 American troops were billeted in and around the city and led by a most dynamic commander. With troops urgently required elsewhere, they were replaced by 8,500 soldiers, around 700 of whom were diverted to Fallujah and Baghdad.

Forget hearts and minds, for now

EPA

Thus harried, American commanders have abandoned the pretence of winning the love of Iraqis ahead of the scheduled vote. “Our broad intent is to keep pressure on the insurgents as we head into elections,” says General Casey. “This is not about winning hearts and minds; we're not going to do that here in Iraq. It's about giving Iraqis the opportunity to govern themselves.”

That could be possible if Iraqis would only accept the opportunity America is offering—which is not the case in Ramadi, for example. Though the city has more than 4,000 police, they refuse to work alongside American forces. According to the marines, the police's

sole act of co-operation is to collect wounded insurgents from their base. For most of the past four months, Anbar has had no provincial administration, since the governor resigned after his children were kidnapped. Elsewhere, America's forces are incapable of giving Iraqis the security they crave because, quite simply, there aren't enough of them.

Precision weapon, absent target

Consider western Ninewa, a vast desert area dotted with fiercely xenophobic towns and ending in over 200 miles of unfenced border with Syria. America has 800 soldiers there. Yet they are barely able to subjugate the town of Tal Afar, outside which they are based. In September, American forces fought a battle (in style, a prelude to the retaking of Fallujah) to wrest it back from insurgent control after Abu Musab al-Zarqawi, a Jordanian fanatic, was reported to be preaching in the town's mosques. Over 80 civilians were killed in the crossfire and 200 buildings flattened. In November, insurgents blew up the town's police stations. The local police chief and his bodyguards are the only police still working; he changes his disguise several times a day.

Little surprise that the Americans had not visited the nearby smugglers' town of Baij in force for three months, until they rode there one recent night in a convoy of 1,000 troops, with Apache attack helicopters flying overhead. The target was three houses in the town centre which signal intelligence had linked to Mr Zarqawi's group. The Americans had no further intelligence to support their mission except that provided by an informant from the local Ayzidi tribe, America's main ally in the area. This source claimed there was a wounded Yemeni rebel in the town. “I think it should be a great operation,” said Colonel Robert Brown, beforehand. “I think a lot of folks from Fallujah have gone there and we need to go there.”

There was no one in the three targeted houses bar women and children. Baij's police station had been blown up and its police had fled. The town's English-speaking former mayor, Abdullah Fahad, was frank about the town's allegiances. “There are terrorists here, not from Syria, not from Mosul, but from Baij. Some are Baathists and some are Islamists and before they hated each other but now they work together, and they tell people that if they don't work with them they will kill them.”

Mr Fahad, who claimed to have survived several assassination attempts and whose son had been kidnapped, refused to help the Americans on the grounds that he would be murdered if he did. When the American commander offered to protect him, he replied: “Thank you, but you are not always here. This is the first time I have ever seen you.” Whereupon the American troops labelled Mr Fahad a “bad guy”, and debated whether to detain him.

Instead, they detained 70 men from districts identified by their informant as “bad”. In near-freezing conditions, they sat hooded and bound in their pyjamas. They shivered uncontrollably. One wetted himself in fear. Most had been detained at random; several had been held because they had a Kalashnikov rifle, which is legal. The evidence against one man was some anti-American literature, a meat cleaver and a tin whistle. American intelligence officers moved through the ranks of detainees, raising their hoods to take mugshots: “One, two, three, jihaaad!” A middle-tier officer commented on the mission: “When we do this,” he said, “we lose.”

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Egypt

Good Copts, sad Copts

Dec 29th 2004 | CAIRO
From The Economist print edition

A troubled religious minority

Get article background

LIVING together is not always easy. After 14 centuries of cohabitation, Egypt's Muslim majority and Christian minority know this full well. Still, both communities were surprised at the nationwide passion roused by a simple marital dispute in the grimy delta town of Abul Matamir, 145km (90 miles) north of Cairo.

The trouble began when the wife of a local Coptic priest sued for divorce. Told by her church that she could not have one, despite the fact that her purportedly abusive husband had lost both legs to diabetes, 47-year-old Wafa Constantine threatened to convert to Islam. Then she disappeared.

The rumours spread that she had fallen victim to a supposed wave of forced conversions. The hubbub reached a climax in early December with violent demonstrations at Cairo's Coptic cathedral and the departure of Pope Shenouda III, head of the Coptic Church for 33 years, into self-imposed exile in a desert monastery.

Calm, and Pope Shenouda, have returned to the streets of Cairo. Security officials say that Ms Constantine has also gone back to the church, where she is now in the care of nuns. Yet the case has opened a range of sensitive issues, from Coptic claims of discrimination to calls from within the church for reform, including an end to its strict ban on divorce.

With some 10m adherents, most of them in Egypt, the Coptic Orthodox church is the largest in the Middle East. Strong attendance and a dramatic revival of monasticism attest to its vibrancy. Yet the church has suffered sporadic sectarian clashes. And if Coptic Christianity has kept pace with the rise of fervour among Egypt's Muslims, it has also remained rigidly hierarchical and conservative.

In recent years the church, backed by strident émigrés in the West, has successfully lobbied Egypt's government to ease past restrictions on such things as the building of churches and the broadcasting of services on state television. It has won back property confiscated during land reforms in the 1950s. Sectarian squabbles have grown less frequent and bloody since the government crushed an Islamist insurgency in the 1990s. Yet Copts still complain that they are politically disfranchised and subjected to petty discrimination.

Muslims tend to dismiss such gripes, pointing to the success of prominent Coptic businessmen, and to the fact that most Muslims, too, have little say in Egypt's far-from-democratic politics. Discrimination also hurts Muslims, such as the tiny Shia minority, and Islamists who try to circumvent legal bans on religiously-based political parties. Besides, even some Copts admit to suspicions that the rumpus over Ms Constantine is a kind of smokescreen designed to obscure real

strains inside the church. Like marital problems, these tensions are quite familiar to all Egyptians: the issues of reform, liberalisation and succession. Pope Shenouda is 81, five years older than President Hosni Mubarak.

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Israel and Palestine

Two leaders seek to consolidate

Dec 29th 2004 | JERUSALEM
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Old foes circle each other in a hopeful prelude to resuming talks

THE leaders of both Israel and Palestine are beefing up their power in the face of momentous challenges expected in 2005. The new chairman of the Palestine Liberation Organisation (PLO), Mahmoud Abbas, also known as Abu Mazen, has launched his campaign to win the presidency of the Palestinian Authority (PA) in an election on January 9th which he is now thought sure to win, due partly to a dearth of serious challengers.

But once in office, he will be weighed down by the burden of the late Yasser Arafat's legacy, assailed by strong opponents among the Palestinians, and hobbled by a near-derelict state apparatus. And he faces fierce pressure from abroad to revamp the Palestinians' entire political, security and economic set-up.

Israel's prime minister, Ariel Sharon, who has dubbed 2005 “the year of opportunity”, has equally daunting tasks ahead. His main one is to “disengage” Israel's forces from the Gaza strip and to uproot all Jewish settlements there, along with a handful in the north of the West Bank, the main part of a heralded Palestinian state. Somehow, Mr Sharon must quell the settlers' vehement opposition to the evacuation. And once he has withdrawn from Gaza, he will face pressure from abroad to negotiate a withdrawal from most of the West Bank too.

Mr Abbas has so far reiterated the PLO's usual demands: that Israel should withdraw from all the land it occupies in the West Bank, East Jerusalem and Gaza; that East Jerusalem should be acknowledged as the capital of a future Palestinian state; and that the millions of Palestinian refugees outside Israel and the occupied territories should be allowed to return. But Mr Abbas has also sought to divest himself of the legacy of Arafat, who endorsed the violence of the Palestinians' current *intifada* (uprising); Mr Abbas has condemned it and urged the resumption of peaceful negotiations for an independent Palestine.

The difficulty of Mr Abbas's job was underlined on December 23rd by a strong showing, in municipal elections, by the Islamist movement, Hamas, which opposes a ceasefire and refuses to accept the existence of a Jewish state. Never having taken part in such elections before, Hamas apparently won nine of the 26 local councils outright, while Fatah, the main secular party (founded by Arafat) under the PLO's umbrella, won 16. With Hamas boycotting the presidential election, opinion polls suggest that Mr Abbas may win a comfortable majority of the vote—enough to give him legitimacy, even without Hamas's endorsement. But whether Mr Abbas would then be able to stop Hamas from continuing its bombing campaign is not clear.

The Israeli government has agreed to withdraw its forces from Palestinian towns before the presidential vote and to let Palestinians living in Arab East Jerusalem, which the Israelis consider their sovereign territory, vote too. Mr Sharon said he would meet the PA leader, once elected, to discuss a “co-ordinated withdrawal” from Gaza. He again demanded a “full cessation of terrorism

in deeds rather than declarations” as a precondition for further negotiation.

Now that Mr Sharon has formed a new coalition with the more negotiation-prone Labour party, he has a solid parliamentary majority for disengagement. Moreover, he won a bargain deal, giving only minor portfolios to his new partners. Labour's leader, Shimon Peres, accepted the rather vacuous title of “second deputy prime minister”, which requires an amendment in parliament, rather than the foreign ministry that he coveted.

So Mr Sharon's government looks more stable—at a cost of inflaming the right. The settler leaders look politically isolated. Mr Sharon has thwarted their efforts to prompt an early general election or a referendum. But they are still calling on their followers to resist an evacuation physically. Many settlers in Gaza put on orange Star-of-David patches, a reminder of the yellow ones Nazis forced Jews in the Reich to sew on. The use of such Holocaust symbols has not endeared the settlers to more mainstream Israelis. In any event, the issue is still ferociously debated. The withdrawal is not expected until July, settlers may turn violent, and some religious soldiers may refuse to force them to evacuate.

So far, outside powers have not become deeply involved, though many foreign leaders have visited Israel and the Palestinian territories to test the water and urge negotiation. Britain's Tony Blair, who visited just before Christmas, lauded Israel's intention to withdraw from Gaza and advised Palestinians to embark on reform. But Mr Blair's plan for a London peace conference, now due in March, took a knock when Mr Sharon refused to attend. So Britain's prime minister had to make do with a “reform conference” whose main purpose, apparently, will be to bolster a newly-elected leader of the PA in his efforts to clean up his own Palestinian house before trying to persuade the Israelis to negotiate with a view to making the territorial concessions that might lead to a viable Palestinian state.

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Madagascar

Progress at last?

Dec 29th 2004 | ANTANANARIVO
From The Economist print edition

Having avoided civil war, the island state is doing quite well

A COUPLE of years ago, Madagascar was close to civil war. Both candidates at a presidential election insisted that they had won. Supporters of the young, reform-minded challenger, Marc Ravalomanana, drove the incumbent, Didier Ratsiraka, then aged 66, out of the capital, Antananarivo. Mr Ratsiraka's mostly-rural supporters retaliated by blockading the city, and a few hundred people were killed. The stand-off lasted six months before Mr Ratsiraka fled into French exile and was later sentenced, *in absentia*, to ten years' hard labour for embezzlement.

With calm restored, this large island state in the Indian Ocean is recovering. But the urban poor who once marched for democracy are now back on the streets: this time, queuing for rice. Many are hungry. Some blame their new president, whose name is popularly shortened to “R8”, (the Malagasy for ‘eight' being ‘*valo*'). Scribbled on a wall are the words “R8 = famine”.

The problem, as far as urbanites are concerned, is that the reformist they voted for has turned out to be just that. He has pushed through painful but necessary changes, for example by ending price controls on petrol and rice, even if that means hurting his own supporters.

His predecessor used to fix the price of rice at a below-market rate, fleecing the rural poor (who are 70% of the population) to keep urban consumers happy. Mr Ravalomanana has freed prices, thereby boosting rural incomes and making life tougher for the urban poor. To cushion the blow, his government continues to supply limited rations of subsidised rice, which is what everyone is queuing for.

The queues reverberate with grumbles, but most people are still fond of Mr Ravalomanana. Victor Ranjaka, for example, who says he has been waiting by a muddy canal for seven hours to buy rice, nonetheless thinks that “R8” is the country's best hope. And indeed the president, a charismatic dairy tycoon turned politician, has achieved much in 30 months. The economy is growing at a healthy 5% or so. Tourists and textile exporters, who fled when the barricades went up, are coming back.

Mr Ravalomanana appears to have made big strides in fighting corruption. Transparency International, a Berlin-based anti-graft group, says Madagascar is markedly cleaner this year than last. Government seems leaner and more effective. A once over-stuffed cabinet has been cut from 33 ministers to 16, who win bonuses if they meet performance targets. The finance minister, for example, must accelerate GDP growth to 7% in 2005 and push inflation under 6%; the education minister must build 2,000 classrooms. Under-performers risk losing their jobs: three were sacked before Christmas. An official in the foreign ministry laments he has “no free time at work any more”.

After years as a client of France, Mr Ravalomanana has opened his country up to the rest of the

world. Entry visas are no longer a hassle. Chinese traders are everywhere. Rickety state firms such as Air Madagascar and the railways company are now under foreign (often German or South African) management, and will be sold off. In August, Madagascar will join the Southern African Development Community, a mostly Anglophone trade-block-cum-political-forum. Lots of Malagasy people are learning English.

Creditors have forgiven $2 billion of Madagascar's nominal debt, and the European Union has promised €900m ($1.2 billion) to upgrade the country's awful road system. The World Bank hopes that this might be a rare African success; its man on the spot talks of a “hinge moment when things can really change”.

Mr Ravalomanana has promised, ambitiously, to halve the poverty rate in a decade. Besides paving more roads, so that peasants can get their crops to market, he has also started to build more schools and clinics. Estimated school enrolment is up from 69% two years ago to 82%. A new currency depicts scenes of happy people building the new Madagascar.

Most of the benefits of all this are being felt in previously neglected rural and coastal areas. That makes political sense. The president thinks he can count on the urban, ethnic Asian vote, and would like some rural black votes as well.

Not everything is rosy, however. Urban grumbles over rice could grow. Some teachers are striking for higher pay, unpaid soldiers have a habit of lobbing grenades at public buildings, and shops said to be owned by Mr Ravalomanana have also been attacked.

There are two main worries about “R8”. One, as a local businessman puts it, is that “there are questions about the depth of [his] commitment to democracy.” Diplomats say some two dozen political prisoners are still locked up without trial after the upheavals of 2002. In December, protesters were arrested for complaining that officials forced three private radio stations to close. Even bright-eyed donors worry in private that the president is centralising power that could, one day, be misused.

The other worry is Mr Ravalomanana's huge conflicts of interest. While president, he has added several firms to his commercial empire, including a road-building company that bids for public contracts. Optimists point out, however, that his firms don't always win the contracts.

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Ukraine's presidential election

An orange victory

Dec 29th 2004 | KIEV
From The Economist print edition

Reuters

Victor Yushchenko may have won the vote, but when he takes over as Ukraine's new president he faces a daunting task

Get article background

WAS it a revolution? To some, Victor Yushchenko's win in Ukraine's re-run presidential election was too peaceful to qualify. Almost no heads were knocked together; no buildings were stormed. The rallies in Kiev's Independence Square after the rigged vote on November 21st often resembled glorified rock concerts. On victory night, the crowd had shrunk from its awesome peak. Yet none of this should detract from the drama, or the magnitude of the orange-clad protesters' achievement. “For 14 years”, Mr Yushchenko declared early on December 27th, “we were independent, and now we are a free nation.”

Nor should the surly refusal of Victor Yanukovich, the prime minister, to admit defeat obscure the clear orange win. By the provisional official count, Mr Yanukovich lost by almost eight percentage points, or over 2m votes. Alleging widespread irregularities, Mr Yanukovich wants to appeal to the supreme court, which a month ago annulled the November election, itself a run-off between the two Victors after a first round. On December 28th Mr Yushchenko called for a blockade of the cabinet building to increase pressure on Mr Yanukovich to concede.

There were electoral shenanigans this time. Exit polls predicted an even bigger Yushchenko win. But the new voting rules agreed by parliament during the stand-off seem to have worked.

International observers reported fewer irregularities, less intimidation and freer media coverage.

After the court challenges and his eventual inauguration, Mr Yushchenko's first job will be to form a government. That will mean disappointing some in the coalition that helped to push him to power. Among candidates for prime minister are Petro Poroshenko, a businessman ally who says he is ready to serve; Yulia Timoshenko, a demagogic firebrand who might prove as much of a liability in government as she was an asset on Independence Square; Anatoly Kinakh (a former prime minister, like Mr Yushchenko himself); and Oleksandr Moroz, the socialists' leader.

Whomever he picks, Mr Yushchenko and his team need to show to Mr Yanukovich's supporters, who are heavily concentrated in the industrial, Russian-speaking southern and eastern regions, that they are not the rabid, anti-Russian Ukrainian nationalists of propaganda, and that they do not intend to marginalise the east and south. It should help that Mr Yushchenko is coming to power through a fair election rather than an outright putsch.

Among his less glamorous tasks will be the dragging of a large chunk of the Ukrainian economy out of the black shadows, where, according to Mr Yushchenko's own guess, 55% of it now sits. Some Ukrainians may be readier to pay taxes if they believe the new government is more honest than its predecessor. Mr Yushchenko also needs to do something about the corrupt privatisations that he excoriated. At the same time he must make up with Russia's president, Vladimir Putin, who backed Mr Yanukovich and has been humiliated by his defeat. The new government must also decide how to treat the outgoing president, Leonid Kuchma, and his cronies, who might be implicated in electoral fraud.

Mr Kuchma's allies want him to be remembered as a heroic statesman, who forged a country from a rusting chunk of the Soviet Union. His alleged involvement in political assassinations makes that unlikely, as does Ukraine's illicit sale of military kit to Saddam Hussein. But Mr Kuchma deserves credit for helping to avoid a violent end to the crisis, and for dampening wild secessionist talk that briefly flared up in the east. Mr Poroshenko says he knows of no deals over Mr Kuchma's future. Others may be more vulnerable—and know it. Hryhoriy Kirpa, the transport minister, who was allegedly involved in the corrupt channelling of public money to the Yanukovich campaign, was found dead at his house on December 27th.

In all of this, it will help that some tasks that are often faced after revolutions have already been carried out. The protracted election process has itself transformed many Ukrainian institutions: the media, the supreme court, even the security services (though some top spies may yet be incriminated in the poisoning of Mr Yushchenko during the campaign, now confirmed by his doctors, which still disfigures his face). Reforms to the constitution that Mr Kuchma secured in exchange for fairer election rules will also transfer many of the powers that he enjoyed as president to parliament—although Mr Yushchenko will exercise them until next autumn. Whatever Mr Kuchma's motives, the weakening of the president's authority will help to preclude any repetitions of his regime's abuses.

Most of all though, the convulsions of the past few months have changed the way ordinary Ukrainians think. Some in Russia, and even a few in the West, maintain that the “orange revolution” was in reality a cold-war-style western plot. Because of its size and location, Ukraine matters more to America and the European Union than most of the former Soviet Union. But any support from outside the country, for election monitoring and the like, counted for infinitely less than the firm resolution of thousands of people to stay out on the cold streets of Kiev. Hardly any were there out of devotion to the EU; few even out of love for Mr Yushchenko, who may have been a clean candidate in a dirty race but was hardly a magnetic personality. Most simply wanted honest government and honest elections. These are things Mr Kuchma, Mr Yanukovich and Mr Putin just do not understand.

German labour-market reform

Hartz and minds

Dec 29th 2004 | BERLIN
From The Economist print edition

A new and controversial law takes effect this weekend

Reuters

Work-shy or work-seeking?

TRY calling a German bureaucrat after 3pm and the chances are that you will get no answer. But the Berlin branch of the Federal Employment Agency has recently been open as late as 10pm, weekends included. A dozen employees, surrounded by brown folders, are busy typing data into computers. “We have no choice but to get this done by the end of the year,” says one. The scene is replicated in 180 job-centres across Germany: thousands of staff are working extra shifts to prepare the launch on January 1st of “Hartz IV”. This law, based on the work of a commission led by Peter Hartz, Volkswagen's personnel director, is Germany's most important labour-market reform since the war.

The law's underlying concept, “sanction and support”, has worked in other countries. It cuts benefits for those not willing to work, but should help others to find jobs more quickly. Yet no chief executive of, say, a large bank, would do things in quite this way: bringing in a new financial product that relies on unproven technology, and at the same time merging with a shoal of smaller firms.

The long-term unemployed have been taken care of by two branches of the welfare state. If you never worked, your city paid means-tested welfare. If you had a job for long enough, the Federal Employment Agency paid unemployment aid for life, at a rate just over half of previous net income. But this gave little incentive to look for legal work. So the government is merging the two benefits into a single, means-tested benefit for all long-term unemployed. Monthly payments for a single household in western Germany will be €345 ($470); in the east they will be €331. In both cases, recipients get almost as much again in rent and heating allowances.

What sounds straightforward in theory is complicated in practice. For a start, details of the Hartz reforms have kept changing. To counter protests, the government was making final adjustments as late as September. That left only a few months to prepare for the launch of the new system.

Meanwhile, job-centres and municipal welfare offices did not know enough about their clients to determine eligibility under the new rules. They have sent out 16-page questionnaires to some 3.8m long-term unemployed and welfare recipients, asking for information about everything from the income of other family members and personal savings to health insurance and special dietary needs.

Data-gathering on such a scale is quite a feat, but the calculation of benefits is even harder.

Coding German social-security law is a programmer's nightmare. It proved possible to meet such a tight deadline only because Prosoz, a German software firm, had already developed the core of the application. New software technologies were used to produce a service accessible via the internet. For the first time, Germany will have a near-complete database of its less fortunate, making it easier to evaluate training and to detect fraud.

The biggest challenge is to merge parts of the job-centres with the welfare offices. In most places, they will jointly administer the new benefit and help clients find work. But the two bureaucracies have different cultures: one is hierarchical and has focused on paying benefits, while the other sees its main task as social caretaking and has a reputation for independence.

So far, the whole operation has gone surprisingly smoothly. With a week to go before the deadline, 94% of the questionnaires sent out had come back, and benefit statements for 2.2m households had been issued. The computer system, after crashing repeatedly in October and proving unable to deal with complex cases, is more stable. Better still, the threat of not getting the new benefit has prompted many unemployed to look harder for work.

Yet much could still go wrong. Many of those who have had benefit statements claim that the calculations are wrong. Some fear that protests against Hartz could revive, or even turn violent. And it remains to be seen if the software will make the correct payments. Pessimists expect a technical disaster comparable to Germany's ill-fated road-toll system for lorries. Worse, unemployment may go up before it goes down, because welfare recipients who can work will now be classed as unemployed.

The stakes are high. If Hartz IV succeeds, Germany will have taken a big step towards helping its army of long-term unemployed off the dole and into work. If it fails, there will be pressure to break up the Federal Employment Agency, or privatise it. And the popularity of Chancellor Gerhard Schröder's government, which has risen, could plummet. That may be why Mr Schröder has said that, if anything goes wrong, it will be the fault of Wolfgang Clement, his economics minister.

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Kosovo's prime minister

Young and wanted

Dec 29th 2004 | PRISTINA
From The Economist print edition

A prime minister who is accused of involvement in war crimes

Reuters

Hard-nosed Haradinaj

RAMUSH HARADINAJ is, at just 36, Europe's youngest prime minister. He may also be its most controversial. That is hard to credit, as he sits calmly in his spacious office in Kosovo's capital, Pristina. His neatly pressed blue shirt, red silk tie and buffed brogues are in stark contrast to the mud-spattered camouflage he wore six years ago, when he was a senior commander in the Kosovo Liberation Army, which fought a vicious war against the troops of Yugoslavia's (and Serbia's) former president, Slobodan Milosevic.

It is Mr Haradinaj's time in the KLA in 1998-99 that causes disquiet. Vociferous Serbs, including Serbia's prime minister, Vojislav Kostunica, claim that Mr Haradinaj was implicated in war crimes in Kosovo. The Serbs have issued warrants for his arrest, and have called on Kosovo's UN bosses to annul his appointment. Investigators from the war-crimes tribunal in The Hague have questioned Mr Haradinaj in Pristina. But the prime minister dismisses all charges as Serb fabrications.

In fact, the charismatic Mr Haradinaj, who hails from the Decane region of western Kosovo, could prove to be just the right man for the job. The KLA was disbanded after NATO and the UN intervened in the province in June 1999, chasing out Mr Milosevic's tanks and gunmen. Kosovo then became a UN protectorate, but it is still technically part of Serbia and Montenegro, the loose union that replaced Yugoslavia in 2003.

Mr Haradinaj duly swapped his camouflage for a business suit, forming his own political party, the Alliance for the Future of Kosovo (AAK), in April 2000. In October's elections the AAK took nine seats, enabling it to form a coalition with the Liberal Democrat Party, or LDK, the party of Kosovo's president, Ibrahim Rugova. Mr Haradinaj became prime minister in early December. Kosovo's UN bosses termed his appointment “democracy at work”. The secretary-general of NATO, Jaap de Hoop Scheffer, said only that it was “a complicated situation”.

Mr Haradinaj is clever and tough enough to have survived both war against the Serbs and the infighting endemic to Kosovo's violent politics. That may help him to rein in his more hotheaded supporters, and so stave off any danger of a repeat of last March's anti-Serb violence, in which 19 people died and nearly a thousand were injured. He is also astute enough to pay heed to western interests.

The downside is that Mr Haradinaj's appointment has incensed the government in Belgrade, diminishing any chances of dialogue. And he risks being indicted by The Hague tribunal; the chief

prosecutor, Carla Del Ponte, has former KLA leaders in her sights as she prepares to issue final indictments (the agreed deadline for which falls this weekend). Were Mr Haradinaj sent to The Hague, there might be violence by disgruntled ethnic Albanians, especially in his home region.

Talks on the final status of Kosovo are due to begin in 2005, if the province's 1.8m ethnic Albanians and 100,000 Serbs can show progress towards internationally required standards of governance. The UN's secretary-general, Kofi Annan, has said that the economy (unemployment stands at 55%) and security are the two main problems. Kosovo's ethnic Albanians want independence; Serbia is against. The province's UN proconsul, a no-nonsense Dane named Soren Jessen-Petersen, insists that this matter is for the UN and western governments to decide. One official says that Kosovo knows exactly what it has to do before final-status talks can begin; he insists that the talks will not happen if it fails. So it remains essential that Kosovo's people measure up—and that the hotheads keep their cool even if their war-hero-turned-prime-minister is arrested.

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Serbia's borders

Frontier crossings

Dec 29th 2004 | VRSKA CUKA
From The Economist print edition

A porous and lengthening border

WHEN the Yugoslav army began its retreat from the borders of the old Yugoslavia in 1990, its officers could never have imagined it: the Belgrade government is withdrawing all soldiers from guarding Serbia's borders, replacing them with police. The crossing-point at Vrska Cuka, on the Bulgarian border, shows why the troops are being sent back to barracks. From a tall tower, a Serb soldier peers through binoculars. He cannot see far, because the land is hilly and forested. At eight o'clock he comes down, and the tower stays empty until the next morning. Such a man might have given a few minutes' warning of a Bulgarian tank attack, but he can do nothing to stop the Iranians, Kurds, Iraqis and Afghans who pour through the woods, heading to their dream destination: the European Union.

Illegal migration, arms trafficking and drug smuggling are a problem everywhere. But since Hungary joined the EU in May, Serbia has become a frontier state. Few illegal migrants have any interest in staying, so the Serb authorities might not care much about them. But Serbia wants to control drugs, which harm its own people; and it is desperate to become a candidate for the EU.

Vrska Cuka and Zajecar have become places of pilgrimage where foreign experts can check what the Serbs need to plug the gaps when a 6,000-strong police unit takes up the job of border patrol. The border-police chief, Ivica Ivanovic, says that “they promised a lot of things, but so far we didn't get anything.” He needs money, training and equipment. Just three policemen in Zajecar control 150km (95 miles) of border. They admit that some colleagues are open to bribes. “Everyone here is poor,” comments one. The Bulgarians are also suspected of ushering unwelcome asylum seekers into Serbia.

In Belgrade, Alessandra Manuguerra, an Italian policewoman working for the Organisation for Security and Co-operation in Europe, says that “the stuff is coming, we've just purchased it.” She is co-ordinating the supply of vehicles, computers, night-vision equipment and training for the border police. But she points out that in some places there is little infrastructure. In some new crossings, for example to Bosnia, where there was no frontier until 1992, some border posts have no electricity.

With an eye not just to illegal migration and drugs, but to terrorism too, Serbia is snapping up foreign aid to improve its border controls. The lion's share comes from the EU. And Serbia's borders could be getting longer. The police complain that migrants and criminals slip in via

Kosovo, which may one day be independent. And if Montenegro declared independence, the border with Serbia would become international too.

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Freedom of information

Out of the darkness

Dec 29th 2004
From The Economist print edition

The Freedom of Information Act heralds a big change in the relationship between citizens and the state in Britain

WANT to know how many accidents involving nuclear weapons have occurred in Britain over the past 20 years? Or where police speed-cameras are? Or how many patients have died from the MRSA “super-bug” in your local hospital? The Freedom of Information Act, which comes into full effect on January 1st, gives you the right to know all this, and much more. It could mark the end of what the late Richard Crossman called “the British disease”—an obsession with official secrecy.

Most developed countries—more than 50 in all—have freedom of information laws. Britain's was first promised in 1974 by the then Labour government. It took more than a quarter of a century to reach the statute book and a further four years to come fully into force. Although some local authorities are still scrambling to get their houses into order in preparation for the expected influx of information requests, most central government departments are now well geared up, with a mass of easily accessible information already on their websites.

Under the act, anyone, of any nationality, living anywhere in the world, will be able to request information held by more than 100,000 public authorities and other designated non-governmental organisations in Britain, and expect an answer within 20 working days, usually free of charge save for the cost of copying, printing and postage. Only where the costs of retrieving and collating the information are above £600 ($1,160) for a central government department (the rough equivalent of three-and-a-half days' work) or £450 for other public bodies (two-and-a-half days) can a full charge be made or the request refused on the ground of expense.

There are, of course, exemptions. Anything relating to national security, most personal data, court records, information subject to parliamentary or legal privilege, or information likely to “prejudice the effective conduct of public affairs” is subject to an “absolute” exemption which cannot be overridden. But most exemptions are subject to a public-interest test. Although “public interest” is left undefined, Richard Thomas, the independent information commissioner set up by the act, has made it clear that he will be tempted to err on the side of the public's right to know.

Mr Thomas's views matter, for all appeals will be made to him. In the United States, where Mr Thomas has no counterpart, aggrieved members of the public can seek enforcement of their “right to know” only through the courts. In Britain, Mr Thomas will be able to take up their cases. Authorities who refuse to comply with his demands face unlimited fines; individuals face prison sentences.

Civil-rights groups are nevertheless worried that a right of ministerial veto, included in the act, could be used to block any information deemed too politically embarrassing or sensitive by the government of the day. The present government's abysmal record of compliance with the non-statutory “open government” code, in force for the past decade, certainly does not bode well. But

Mr Thomas points out that in New Zealand, on whose freedom of information legislation Britain's act is closely modelled, the ministerial veto has not been used once in the 17 years since the present system was brought in.

After January 1st, it will become a criminal offence to destroy data for which a valid request has been made under the act. In the run-up to this deadline, according to newspaper reports, Whitehall's shredding machines have been working overtime in a last frantic bid to destroy the most sensitive records. But Mr Thomas remains sanguine about such claims. He reckons that shredding is probably mostly about “good record housekeeping” and the removal of unwanted trivia. Computer files, in which most information is kept these days, are notoriously difficult to destroy.

Mr Thomas is not expecting any kind of “big bang” on January 1st. He says that a cultural change in the relationship between citizens and the state was already under way. He expects this now to accelerate, with lobby groups and journalists leading the charge with some big test cases. No one knows for certain how many requests the act will attract, but they are likely to number thousands, if not tens of thousands, a year. Mr Thomas expects that his office may have to deal with around 2,000 appeals in the first year.

Tony Blair has described the Freedom of Information Act as one of the lasting achievements of this government. He could well be proved right.

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London's buses

Fares, please

Dec 29th 2004
From The Economist print edition

Can London's buses keep up their remarkable growth?

ONCE the Cinderellas of London's public transport, buses are now the showpiece. Since his election in 2000, London's mayor, Ken Livingstone, has poured up to £500m ($970m) a year into the capital's bus network. It isn't just money the buses have got more of, but road space as well: London now has 280km (175 miles) of bus lanes, up by a half since 2000. Mr Livingstone's generosity turned a gentle annual increase in bus passenger journeys, of around 3%, into annual growth of more than 8%. The daily average in 2000 was 4.13m; now it is over 5.5m. The buses are more frequent, more reliable and comfier.

Taxpayers might quibble, but Transport for London (TfL), the body that oversees the capital's buses, Tube and taxis, sees it as a stunning success. In their share of journeys made in greater London, buses have gained four percentage points from cars. That is unlike anything in the world, says Jay Walder, its finance chief. London's planners say that they have replaced a vicious circle, in which people shun poor public transport for their cars, thus creating worse congestion, slower buses and ever greater losses, with a virtuous one.

But can it continue? The growth is at least partly thanks to a stonking subsidy that allowed Mr Livingstone to slash fares. How much each extra passenger has cost is hotly debated. The overall subsidy now is 24p per journey, and TfL reckons gaining each extra one has cost 61p. But Tony Travers of the London School of Economics thinks the real figure is at least double that. At any rate, central government is unwilling to spend more money this way.

So the growth must now be in fares, not subsidies. To balance TfL's books, these will go up by around 12% in January; there will be a similar rise in the next two years, and fares are projected to go up at two percentage points above inflation until 2010.

That may threaten the growth in passenger numbers of which Mr Livingstone is so proud. After all, if low fares got people on to buses, high fares may drive them away. But TfL reckons fares are so low—53p, on average—that passengers are not very price-sensitive. Peter Hendy, TfL's head of surface transport, says a 5% rise in January 2004 barely dented growth.

Even if that's right, TfL faces other problems. First, meeting peak demand in central London requires so many buses that they slow each other down. Here the answer is better pricing. TfL is using its "Oyster card", a whizzy electronic ticketing system, to create a new super-peak fare category to encourage people to travel earlier or later, when buses are emptier.

The second big weapon is technology. The electronics on London's buses are "the biggest and oldest such system in the world", says Mr Hendy. Some bits, such as the gadgets that count wheel revolutions, date back to the 1960s. TfL is now planning to buy a new £100m system that will track the bus's location, communicate with the control centre and signal to traffic lights that a bus

is approaching. That will speed buses' passage through junctions, help keep them at efficient intervals and let people know when the next one is coming. Going cashless, which is planned for 2006, will also increase speeds and cut costs.

Keeping intruders out of bus lanes would also help. TfL has given responsibility for policing bus lanes to a specialist unit and has improved CCTV coverage. Recorded obstructions have fallen from 9.1 per km in August 2003 to 4.8 per km a year later, and there is room for improvement.

All these may indeed help. But the fundamental problem is that buses are not a good way of moving lots of people long distances round a crowded city. What London really needs is a bigger, better underground railway system. Even if the billions being splurged on the Tube turn out to be well spent, it will be a decade before it can carry a lot more passengers. Until then, buses will struggle to fill the gap.

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Foreign bosses

Outside in

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Why there are so many foreign executives in Britain

WHEN Patrick Cescau, a Frenchman, was appointed boss of Unilever, the British arm of an Anglo-Dutch firm that traces its roots back to the heyday of the empire, nobody batted an eyelid. But it is harder to imagine a Briton as the boss of, say, Crédit Agricole, a French bank of similarly ancient lineage.

Foreigners head up many of Britain's top companies. Jean-Pierre Garnier, another Frenchman, is in charge of GlaxoSmithKline (GSK). Vodafone has an Indian boss. Even the venerable Cadbury Schweppes is run by an American. In all, 17 of the 50 biggest British firms are run by foreigners, compared with five in Germany and America and three in France (see chart). There's a big foreign presence in middle management, too. Coutts, a private bank, estimates that the number of foreign executives in Britain has more than doubled in a decade.

Why are British firms so open to hiring foreigners? Partly because British companies have a smaller pool of native bosses to draw from than their American competitors; partly because foreign executives bring experience of different working practices and useful knowledge of overseas markets. And it is easier for them than for their European counterparts to hire foreigners: more candidates speak English than French or German.

But the main reason, according to Peter Breen, a headhunter at Heidrick Struggles, is British business culture. “Britain is not by any stretch of the imagination a chauvinistic nation,” he says. “French business is dominated by graduates of the grandes écoles, and the Americans are very monocultural.”

What's more, foreigners see Britain as an attractive place to work. British executive pay is relatively high and taxes relatively low. The typical boss will have teenage children, says Mr Breen, London's nightlife is lively and varied, and there is a good selection of schools.

Other factors may be less attractive. British companies pay well, but they also publish more information about executive compensation than do foreign ones. Activist shareholders can make life difficult, as Mr Garnier discovered in 2004 when they forced GSK's board to cut his remuneration. And the government's introduction of a £1.8m ($3.5m) cap on tax-free pension savings will have hit the highest of the high flyers.

Foreigners may be the cause, as well as the consequence, of high pay. According to the Institute

of Directors, four of the five highest paid bosses in Britain come from overseas—perhaps reflecting the cost of persuading them to move to a different country. Hot foreign competition may keep Britons out of some top jobs, but it may also keep up their pay.

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Reforming pensions

Fashionable but flawed

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The government is coming round to a new solution to the pensions problem

THE pension system, it is generally agreed, is in a mess. With an election looming, politicians are searching for solutions. Alan Johnson, secretary of state for work and pensions, wants an attractive policy for Labour's manifesto. He's keen on the "citizen's pension".

A citizen's what? Stripped of the voguish labelling, this would be a benefit for all pensioners who have lived in Britain long enough to qualify. If they pass this residency test, they would automatically receive a pension that aims to prevent poverty in old age. The idea has been borrowed from New Zealand.

The government initially dismissed the notion. Shortly after Mr Johnson's appointment in September, Malcolm Wicks, the pensions minister, said: "It is anyone at all's pension, so please do not stain the decent concept of citizen with it." But a month later Mr Johnson said he was "veering towards being very positive about it".

A vain attempt to simplify state pensions
Weekly values for single pensioner, April 2004 to March 2005

	Basic state pension	State second pension*	Guarantee credit	Savings credit	*Proposed citizen's pension*
Maximum	£80	£140 (avg £21)†	£105	£16	*£105/115*
Eligibility	Men from 65, women from 60, depending on years of NI contributions/ credits	Men from 65 and women from 60, depending on their earnings as employees	People from 60 with original income below £105	People from 65 with original income between £80 and £144	*All men from 65 and women from 60 who satisfy residency qualification*
Type	Flat-rate benefit, uprated with prices	Earnings-related benefit; starting payment linked to earnings, then uprated with prices	Means-tested top-up to a minimum-income level uprated with earnings	Additional means-tested payment, which rises faster than earnings	*Universal flat-rate benefit, uprated with earnings*
Main drawbacks	Low and diminishing value relative to living standards. Women do especially badly	Diminishing in value relative to living standards for average earners	A fifth of eligible pensioners do not claim it	Discourages saving by workers because it is withdrawn at 40%	*Raises costs, breaks with contribution principle*

*Employees can be contracted out into private plans which are supposed to match broadly the benefits relinquished in the state second pension; 56% of eligible employees were contracted out in 2002-03 †Among pensioner population, March 2004

Sources: Pensions Policy Institute; *The Economist*

The citizen's pension would simplify what the Pensions Commission calls "the most complex pension system in the world". The complexity starts (see table) with two benefits based on

national-insurance (NI) contributions. The most important is the basic state pension (BSP). But many pensioners also get the state second pension (S2P). If they meet a means test, they can claim the top-up pension credit, which provides a minimum-income guarantee and an additional “savings credit”.

The citizen's pension offers a simple alternative to this bewildering tangle of benefits. In a proposal from the National Association of Pension Funds, the BSP, S2P and pension credit would be replaced by a single flat benefit, payable to every pensioner regardless of his or her contribution record, household status or means. The new pension would be uprated every year with earnings in order to keep up with rising living standards.

The reform offers simplicity because it limits the role of government to preventing poverty. Everyone could bank on getting a basic income in retirement. Individuals could build upon that through private pensions without the financial disincentive of the means-tested pension credit.

But there are snags. The new benefit might be simpler but additional means-tested benefits to meet housing costs would still be needed. Policing the residency qualification would be more difficult in Britain than in New Zealand. Sir Peter Davis, head of an employer task-force on pensions, says it would be “very unhealthy to break the link between contributions and benefits”. The trend in other countries is to strengthen this link.

The main worry about the new pension is its potential cost. The Pensions Policy Institute (PPI) estimates that covering all pensioners at £105 ($204) a week—the current means-tested minimum—would add £7 billion to the pensions bill. However, there would be immediate calls to raise the rate, since some pensioners getting the additional savings credit would lose out. But if it rose to £115 a week, the extra cost could double, says Chris Curry, research director of the PPI.

Remarkably, however, advocates of the citizen's pension argue that it could be introduced at the £105 rate with an initial saving. The spare cash is conjured up because abolishing S2P would release tax revenues that currently support the private provision of this benefit. At present, over half of employees who qualify for S2P are “contracted out” of the state scheme. In broad terms, they relinquish their rights to the state benefit in return for rebates on NI contributions. The rebates finance a part of their private pension that is supposed to match broadly what they would get from S2P. Abolishing S2P would end contracting out and with it the rebates, worth £11 billion a year. The government would keep this money, so the reform would be self-financing.

But this is a sleight of hand. Abolishing the rebates is a tax increase. And taxes would have to rise again in the future as the state pays for pension costs that would otherwise have been funded privately from the rebates. The immediate impact of abolition would be to weaken private-sector pension schemes. Sir Peter says that it “would have a devastating effect on defined benefit schemes” (those offering pensions linked to salary and years of service). Far from providing a platform for more private pension saving, the citizen's pension might reduce it. The danger is that many workers would pin their hopes on future taxpayers stumping up for a more and more generous citizen's pension.

Britain has developed a two-tier pension system, which seeks both to reduce poverty and to ensure that workers are not drastically worse off when they retire. A citizen's pension might work if the government could confine itself to the task of preventing poverty. But the history of British pensions suggests that the state cannot limit its involvement to this narrow role. That is why the citizen's pension, on its own, will not work in Britain. And that is why Mr Johnson's version of the citizen's pension is likely to be a much more modest affair than his rhetoric suggests.

Tony Blair

A year of huge challenges

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From The Economist print edition

AP

Two particular tasks face the world's rich nations, argues Britain's prime minister in this article: sorting out Africa, and dealing with climate change

BRITAIN takes over the presidency of the G8 this week. As each member-country holds this position in rotation, critics sometimes dismiss the presidency as little more than a chance to show-case the host nation at the annual summit. I believe they are wrong. I see it instead as an important opportunity to influence the international agenda of some of the world's most prosperous and powerful countries.

This doesn't mean, of course, that any country can successfully push the G8 in a direction the other members do not want to go. But the presidency can give an important impetus to tackling problems that the rest recognise need addressing. This is certainly the outcome I want from Britain's presidency in 2005. I have made it clear that our efforts will focus on progress on Africa and climate change.

Why? Firstly because, along with the threat from international terrorism and the spread of weapons of mass destruction, I believe they are the most serious problems facing the world today. Second, because they are both problems beyond the power of any single country, no matter how well-intentioned or powerful, to tackle on its own. A solution requires co-ordinated international action and, above all, leadership, which the G8 is uniquely placed to give.

Africa is a continent of breathtaking beauty and diversity with an extraordinary, energetic and resilient people. As I have seen from my own visits, given a chance, no matter how small, to better themselves, they seize it.

But Africa is also a place plagued with problems—debt, disease, conflict, corruption and weak governance—so embedded and widespread that no continent, no matter how prosperous, could tackle them on its own. And Africa is not prosperous.

It's the world's poorest continent. Half the population of sub-Saharan Africa lives in absolute poverty. And, uniquely, Africa is getting poorer. Average income per head is lower now than it was 30 years ago.

It is also the continent worst hit by the HIV/AIDS epidemic. Twenty million Africans have already died from the disease, and it is going to get much worse. In some countries, four out of ten people are infected. Life expectancy is falling, and will soon be down to just 30 years. This catastrophe has single-handedly wiped out half a century of development gains.

In Sudan, and elsewhere, we have seen the tragic effects of war. At least 2m people have died in Sudan's north-south conflict over the past 21 years, and millions more have been affected. A comprehensive peace agreement could turn Sudan around; but Darfur remains a catastrophe, and we cannot turn our attention away from it. In Zimbabwe we see the great damage that can be done to a country, its economy, its people and their potential by the destruction of democracy and the failure of governance. We have worked with the international community to identify benchmarks to help Zimbabwe restore the rights and prosperity of its people.

Why we should care

Should this matter to the rest of the world? For democratic governments, it should, because it matters to our citizens. They give millions of dollars to help Africa and its people. They campaign for their governments to do more. They passionately believe, as I do, that it can't be morally right, in a world growing more prosperous and healthier by the year, that one in six African children still die before their fifth birthday. The worldwide campaign to make poverty history rightly challenges us to act.

But the state of Africa is also a case, unusual in politics, where heart and head are pushing us in the same direction. We must now all accept the utter futility of trying to shut our borders to problems abroad. Famine in Africa will affect our countries because it will be a trigger for mass migration. Conflict, too, drives millions to flee their homes. Both create the conditions for terrorism and fanaticism to take root and spread directly to Europe, to North America and to Asia. We spend billions on humanitarian aid to help pick up the pieces. A prosperous Africa, where its people have the chance to fulfil their talents, is in all our interests.

The sheer scale of Africa's problems can induce an understandable sense of hopelessness that progress can be made. It helps explain the shocking fact that aid to Africa, notwithstanding Britain's increased contribution, has fallen since 1995. But there are reasons for optimism. We have seen the emergence of a new generation of democratically elected African leaders, determined that their governments will work cleanly and effectively to improve life for their citizens. Their New Partnership for Africa's Development sets out a challenging agenda.

According to the World Bank, governance has been improving faster in Africa than in many other areas of the developing world. Conflict in Africa, although still devastating where it occurs, is also decreasing. Mozambique, a country brought to its knees by vicious fighting, has cut its levels of poverty by almost a third since peace. The civil war in Sierra Leone, thanks to the intervention of British forces, is over and the country is slowly recovering. The African Union is playing an increasing role in settling conflicts.

AP

With a little more help, he can prosper

We know that the best way to reduce poverty is through economic growth. And we know that economic growth can be increased by aid. Fifteen countries in Africa had average growth rates above 4% throughout the 1990s. Half of Africa had growth of over 5.9% in 2001. Many of the countries which have benefited from increased aid, such as Uganda and Mozambique, have seen poverty fall over an extended period. Targeted British assistance, for example, has already enabled Uganda to introduce universal primary education and free basic health care.

We can also increase the effectiveness of our aid. Tied aid, directed by the priorities of the donor rather than the recipient and bypassing government systems, actually undermines effectiveness and internal accountability.

Getting others involved

I am proud that Britain's involvement is helping this progress. We are doubling our bilateral aid to Africa; it will reach £1 billion ($1.9 billion) in 2005, and will rise further. We have written off 100% of the debts of the poorest countries. We have dramatically increased help to tackle the big killers such as AIDS and malaria.

But to help Africa continue this progress we need a concerted, co-ordinated global effort. Ad hoc, short-term measures will not do. A comprehensive programme of action is needed with sustained commitment to implementation by Africa and by the international community. Truly, a new partnership is required. We need concerted action to improve opportunities and growth, to reduce debt, to tackle HIV, malaria and TB, to fight corruption and to promote peace and security. We also need to tackle trade barriers which push up prices for our consumers, prevent African countries exporting their products and see Europe spending more on subsidising its own farmers than on aid to Africa. This is an investment for our, and Africa's, future: more than half of Africa is under 15.

It is already clear what sort of measures are needed, and I believe the recommendations of the Commission for Africa, which will report in the spring, will take us further.

Action requires more resources, and now. There will be calls to double aid to Africa. I believe all the G8 members can do more: extending debt relief, providing more resources to tackle HIV, giving more girls the chance of education, reducing rates of infant mortality, building the infrastructure needed for private-sector growth. Investment is needed now, and we must look at ways to bridge the gap. Gordon Brown has set out one way we can do so through the International Finance Facility, which would raise extra aid money by leveraging capital markets and issuing bonds.

I hope the G8 will agree not only to a plan of action but also to its implementation, a process of monitoring and review. We all need to be accountable for carrying out the commitments we have made.

The changing climate

Africa, of course, is also seen by experts as particularly vulnerable to climate change. The size of its land-mass means that, in the middle of the continent, overall rises in temperature will be up to double the global rise, with increased risk of extreme droughts, floods and outbreaks of disease. It is estimated that African GDP could decline by up to 10% because of climate change.

But no country will escape its impact. And there can be no doubt that the world is getting warmer. Temperatures have already risen by 0.7°C over the past century, and the ten hottest years on record have all occurred since 1991. It's the fastest rise in temperatures in the northern hemisphere for a thousand years.

This temperature rise has meant a rise in sea level that, if it continues as predicted, will mean hundreds of millions of people increasingly at risk from flooding. And climate change means more than warmer weather: other extreme, increasingly unpredictable, weather events such as rainstorms and droughts will also have a heavy human and economic cost.

It is true, of course, that some scientists still contest the reasons for these changes. But it would be false to suggest that scientific opinion is equally split. It is not. The overwhelming view of experts is that climate change, to a greater or lesser extent, is man-made and, without action, will get worse. And as the evidence gets stronger by the day, the sceptics dwindle in number. From Arnold Schwarzenegger's California to China's Ningxia province, the world is taking climate change seriously.

But just as technological progress and human activity have helped cause this problem, it is also within our power to lessen its impact and adapt to change. Science has alerted us to the dangers our planet faces and will help us meet these challenges.

But we need to act now. Delay will only increase the seriousness of the problems we need to reverse, and the economic disruption required to move to more renewable forms of energy and sustainable manufacturing in the future. And the G8, again, needs to lead: not just because we currently account for 47% of global CO2 emissions, but also because it is our scientists, our industries and our economies that must help solve this problem.

Russian ratification of the Kyoto protocol means that we now have a new global treaty that is about to come into force. This is good news. But the level of change and ambition required will be far more than the Kyoto protocol is likely to provide. And with the United States, the world's largest emitter of greenhouse gases, refusing to sign up to the protocol, this makes the measures we could secure through the G8 even more vital.

AP

The melting ice-caps: a global responsibility

Although the United States will not ratify Kyoto, other approaches, such as the McCain-Lieberman bill now going through Congress, could stand a better chance of support. Some American states and businesses are also already taking a lead on initiatives to reduce greenhouse emissions. New York has a state emissions-reductions target of 5% below 1990 by 2010 and 10% by 2020. California has a string of policies in train, including regulating carbon emissions from vehicles and increasing the amount of energy generated from renewable sources to 20% of electricity sold into the state by 2010.

The United States is also leading investment and research in the new low-carbon economy. It is not a choice, as some suppose, between economic prosperity and tackling climate change. It is technological advances and economic development that will provide the realistic solution. It is the firms and countries that lead the way in adapting to this challenge that will have the competitive advantage in the future.

In Britain our economy grew by 36% between 1990 and 2002 while greenhouse gas emissions fell by 15%. British Petroleum has set and achieved targets, such as reducing its greenhouse-gas emissions by 10% in just three years. To achieve this, the company introduced an emissions-trading scheme: it cost $20m to implement, yet saved it $650m over the three-year period.

Those companies that adapt early to the demands of a future low-carbon economy know they gain competitive advantage. So this is not just the right thing to do for the sake of the planet. It is the right thing to do commercially.

Why we should act

Advocates for action on climate change must confront three economic arguments. First, if the case is so clear, why not just leave it to business? To that point I would say it is precisely in this kind of long-term challenge, where there are demonstrable and potentially irreversible social effects, with returns accruing over periods beyond commercial discounting, that government must play a clear role.

Second, critics charge that government is picking new, untried technologies that may fail. Here I would say the approach of clever governments is not to pick technologies, but to establish conditions where innovation is supported and encouraged into the market-place.

Finally, some argue that there are more immediate problems. In some senses, they are right: over the next five years, for example, water pollution will cause more harm worldwide. It is wrong, however, to see these problems as mutually exclusive. Without a stable climate, addressing other environmental threats will be impossible, ensuring a future of more degraded water and land. Every year lost on tackling climate change will take us further along the path where the costs of

action multiply. And I have never believed that simple discounting can be an adequate tool for potentially catastrophic outcomes 50 or more years ahead.

We are at a stage where the role of government and global policy must be to encourage the development and commercial viability of the new technologies that have the potential to mitigate the effects of climate change. There is no single “silver bullet” that will solve the problem, despite what some enthusiasts for nuclear or hydrogen power may tell you. But a whole range of technologies are either available now, or will become available, which, taken together, can make a huge difference.

I believe the G8 can take a global lead both in making the world aware of the scale of the problem and in proposing ways to tackle them. Through the G8, we have the opportunity to agree on what the most up-to-date investigations of climate change are telling us about the threat we face. We could also endeavour to identify and support the technological measures necessary to meet the threat, which would complement rather than undercut the Kyoto protocol. And the G8 must also engage actively with other countries with growing energy needs—such as China, India, Brazil and South Africa—to ensure that they meet their needs sustainably and adapt to the adverse effects of climate change, which seem inevitable.

Given the different positions of the G8 nations on this issue, such agreement will be a major advance. But I believe it is achievable and necessary.

I have no doubt that some may argue that aiming so high both on climate change and Africa is a hostage to fortune. I recall that fictional Whitehall mandarin, Sir Humphrey Appleby of “Yes, Prime Minister”, describing such ambitions as “courageous” when he hoped to put Jim Hacker off a particular course of action. But I remain hopeful that we can succeed in these aims. It is vital for the world that we do.

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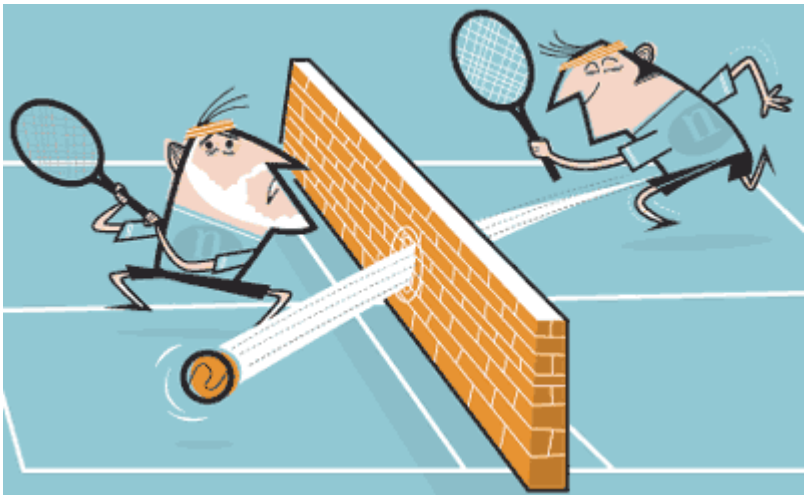
Small wonders

Dec 29th 2004
From The Economist print edition



Nanotechnology will give humans greater control of matter at tiny scales. That is a good thing, says Natasha Loder (interviewed here)

ATOMS are the fundamental building blocks of matter, which means they are very small indeed. The world at the scale of atoms and molecules is difficult to describe and hard to imagine. It is so odd that it even has its own special branch of physics, called quantum mechanics, to explain the strange things that happen there. If you were to throw a tennis ball against a brick wall, you might be surprised if the ball passed cleanly through the wall and sailed out on the other side. Yet this is the kind of thing that happens at the quantum scale. At very small scales, the properties of a material, such as colour, magnetism and the ability to conduct electricity, also change in unexpected ways.

It is not possible to "see" the atomic world in the normal sense of the word, because its features are smaller than the wavelength of visible light (see table 1). But back in 1981, researchers at IBM designed a probe called the scanning tunnelling microscope (STM), named after a quantum-mechanical effect it employs. Rather like the stylus on an old-fashioned record player, it could trace the bumps and grooves of the nanoscale world. This allowed scientists to "see" atoms and molecules for the first time. It revealed landscapes as beautiful and complex as the ridges, troughs and valleys of a Peruvian mountainside, but at the almost unimaginably small nanometre (nm) scale.

A nanometre is a billionth of a metre, or roughly the length of ten hydrogen atoms. Although scientists had thought

about tinkering with things this small as long ago as the late 1950s, they had to wait until the invention of the STM to make it possible.

Nanotechnology is generally agreed to cover objects measuring from 1 to 100nm, though the definition is somewhat arbitrary. Some people include things as small as a tenth of a nanometre, which is about the size of the bond between two carbon atoms. At the other end of the range, in objects larger than 50nm the laws of classical physics become increasingly dominant.

There are plenty of materials that simply happen to have features at the nanoscale—such as stained glass, mayonnaise or cat litter—but do not qualify for the nanotechnology label. The point about nanotechnology is that it sets out deliberately to exploit the strange properties found in these very small worlds.

From ants to atoms 1

One millimetre = 1m nanometres (nm)

Item	Size in nm
Red ant	5m
Human hair (width)	80,000
Diameter of a typical bacterium	1,000-10,000
Average wavelength of visible light	400-700
Human immunodeficiency virus	90
Wavelength of extreme ultraviolet light	40
Cell membrane	10
Diameter of DNA	~2.5
Ten hydrogen atoms	1
Water molecule (width)	0.3

Sources: Wikipedia; National Institute of Standards and Technology; Intel; Royal Society; R. Smalley

At the nanoscale, explains George Smith, the amiable head of materials science at Oxford University, “new, exciting and different” properties can be found. If you were to start with a grain of sugar, he says, and chopped it up into ever smaller pieces and simply ended up with a tiny grain of sugar, that would be no big deal. But as an object gets smaller, the ratio between its surface area and its volume rises. This matters because the atoms on the surface of a material are generally more reactive than those at its centre.

So icing sugar, for instance, dissolves more quickly in water than does the granulated form. And if silver is turned into very small particles, it has antimicrobial properties that are not present in the bulk material. One company exploits this phenomenon by making nanoparticles of the compound cerium oxide, which in that form are chemically reactive enough to serve as a catalyst.

In this invisible world, tiny particles of gold melt at temperatures several hundred degrees lower than a large nugget, and copper, which is normally a good conductor of electricity, can become resistant in thin layers in the presence of a magnetic field. Electrons, like that imaginary tennis ball, can simply jump (or tunnel) from one place to another, and molecules can attract each other at moderate distances. This effect allows geckos to walk on the ceiling, using tiny hairs on the soles of their feet.

But finding novel properties at the nanoscale is only the first step. The next is to make use of this knowledge. Most usefully, the ability to make stuff with atomic precision will allow scientists to produce materials with improved, or new, optical, magnetic, thermal or electrical properties. And even just understanding the atomic-scale defects in a material can suggest better ways of making it.

Indeed, entirely new kinds of material are now being developed. For example, NanoSonic in Blacksburg, Virginia, has created metallic rubber, which flexes and stretches like rubber but conducts electricity like a solid metal. General Electric's research centre in Schenectady in New York state is trying to make flexible ceramics. If it succeeds, the material could be used for jet-engine parts, allowing them to run at higher, more efficient temperatures. And several companies are working on materials that could one day be made into solar cells in the form of paint.

Because nanotechnology has such broad applications, many people think that it may turn out to be as important as electricity or plastic. As this survey will show, nanotechnology will indeed affect every industry through improvements to existing materials and products, as well as allowing the

creation of entirely new materials. Moreover, work at the smallest of scales will produce important advances in areas such as electronics, energy and biomedicine.

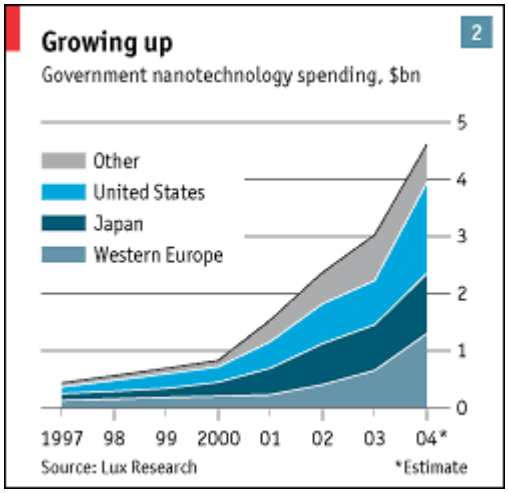
From small beginnings

Nanotechnology does not derive from a single scientific discipline. Although it probably has most in common with materials science, the properties of atoms and molecules underpin many areas of science, so the field attracts scientists of different disciplines. Worldwide, around 20,000 people are estimated to be working in nanotechnology, but the sector is hard to define. Small-scale work in electronics, optics and biotechnology may have been relabelled “nanobiotechnology”, “nano-optics” and “nanoelectronics” because nano-anything has become fashionable.

The “nano” prefix is thought to derive from the Greek noun for dwarf. Oxford's Mr Smith jokingly offers an alternative explanation: that it “comes from the verb which means to seek research funding”. And research funding is certainly available by the bucketload. Lux Research, a nanotechnology consultancy based in New York, estimates that total spending on nanotechnology research and development by governments, companies and venture capitalists worldwide was more than $8.6 billion in 2004, with over half coming from governments. But Lux predicts that in future years companies are likely to spend more than governments.

For America, nanotechnology is the largest federally funded science initiative since the country decided to put a man on the moon. In 2004, the American government spent $1.6 billion on it, well over twice as much as it did on the Human Genome Project at its peak. In 2005, it is planning to shell out a further $982m. Japan is the next biggest spender, and other parts of Asia as well as Europe have also joined the funding race (see chart 2). Perhaps surprisingly, the contenders include many developing countries, such as India, China, South Africa and Brazil.

In the six years up to 2003, nanotechnology investment reported by government organisations increased roughly sevenfold, according to figures from Mihail Roco, senior adviser for nanotechnology at America's National Science Foundation. This large amount of funding has raised expectations that may not be met. Some people worry that all the nanotechnology start-ups will help to inflate a bubble reminiscent of the internet one. But there are good reasons to think that the risk has been exaggerated. Private investors are being much more cautious than they were during the dotcom boom, and much of the money that is being spent by governments is going on basic science and on developing technologies that will not become available for years.



However, a number of existing products have already been improved through nanotechnology, with more to come in the next few years. Bandages for burns have been made antimicrobial by the addition of nanoparticles of silver. Fabrics have been stain- and odour-proofed by attaching molecules to cotton fibres that create a protective barrier. Tennis rackets have been strengthened by adding tiny particles that improve torsion and flex resistance. Other applications include coatings for the hulls of boats, sunscreen, car parts and refrigerators. In the longer term nanotechnology may produce much bigger innovations, such as new kinds of computer memory, improved medical technology and better energy-production methods such as solar cells.

The technology's most ardent proponents claim that it will lead to clean energy, zero-waste

manufacturing and cheap space travel, if not immortality. Its opponents fear that it will bring universal surveillance and harm the poor, the environment and human health—and may even destroy the whole planet through self-replicating “grey goo”. This survey will argue that both sides overstate their case, but that on balance nanotechnology should be welcomed.

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Where very small things can make a big difference

“ARGON! Up, up! Come on, boy, let's go!” Don Eigler, a researcher at IBM's Almaden Research Centre in California, is one of the world's experts in moving atoms. In 1989, he spelled out the letters “IBM” in xenon atoms, which made him the first person to move atoms individually. But today he is having trouble persuading his large Leonberger dog to get up from the office floor.

If dogs were as easy to move as atoms, Mr Eigler would be able to get Argon out of the office by using a computer mouse to point, click and drag him. But although the ability to move individual atoms is impressive, it is not particularly useful for anyone but experimental scientists like Mr Eigler. Most researchers think that moving atoms one by one will not be a practical way of creating new materials.

A better way may be to exploit the natural tendencies of atoms and molecules to crystallise, fold, form layers or otherwise self-assemble. Ordered molecular structures arise spontaneously, for example in crystallisation or in the formation of a snowflake. Scientists have already learnt how to use self-assembly to build nanoscale clusters of atoms, layers, pillars, tubes, ribbons, spheres, rods and rings, as well as more complex assemblies that resemble natural structures such as helices or even flowers. Much current research is concentrated on finding ways of arranging such nanoscale structures so they could serve as devices for, say, storing information or generating electricity from light to make solar cells.

Some, such as Harry Kroto, an eminent professor of chemistry at Britain's University of Sussex, say that nanotechnology is no more than advanced chemistry. But although so far much of nanotechnology has resembled traditional chemistry, increasingly the driving forces behind it are physics, engineering, materials science and information technology. These disciplines have brought new tools for working at the nanoscale, and for building in it too. They include the modern descendants of the scanning tunnelling microscope, and tools for writing, printing and even picking things up. Existing tools have also become more useful, having been combined with powerful computing, automation and visualisation methods such as virtual reality. All this work is allowing

researchers to build libraries of new materials with different and useful properties, along with instructions on how to build them.

First catch your tube

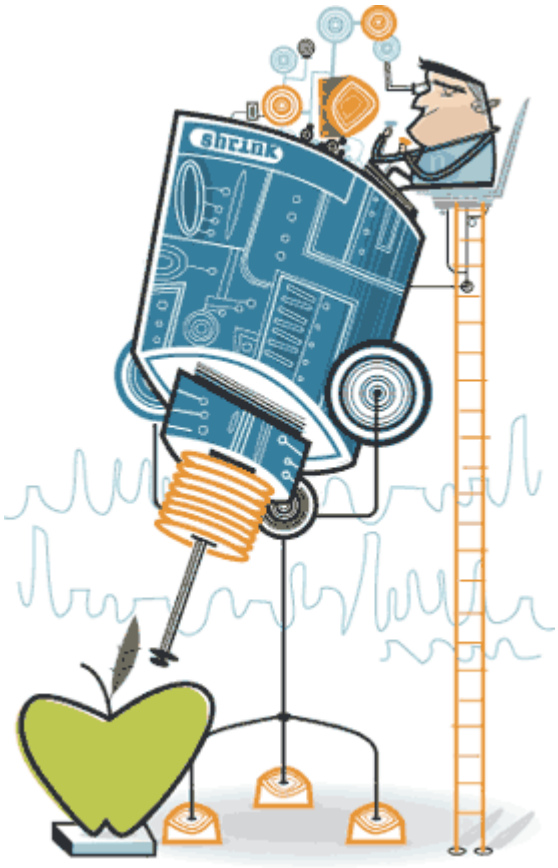
In 1991, a researcher working at the NEC Corporation in Tsukuba, Japan, discovered a new form of carbon that turned out to have extraordinary properties. The so-called carbon nanotube is like a tiny sheet of graphite rolled into a cylinder, with a diameter of around a nanometre, and is very strong and light. It has become the star of nanotechnology. A host of uses has been proposed for it, including in sensors, molecular probes, computer memory, televisions, batteries and fuel cells. The list lengthens every time a new property is discovered in a slightly differently shaped or sized tube. In 2003 scientists at the University of Texas at Dallas found a way of spinning nanotubes into fibres to make the world's toughest polymer.

Meyya Meyyappan, head of nanotechnology at NASA, America's space agency, says that over the next two to three years an entirely new generation of flat-panel displays based on carbon nanotubes is likely to be developed. Field emission displays (FEDs) are based on the idea that electrons are emitted in a grid, rather than from a single source as in a television. Because electrons flow easily down the inside of a carbon nanotube, an array of these tubes could be used to draw the pixels on a display. It would be flat and more efficient than existing displays. NEC, a company that champions carbon nanotubes, is using carbon nanohorns (a close relation) as electrodes in a fuel-cell-powered laptop computer due for release in 2005.

Although carbon nanotubes are becoming cheaper, and can be manufactured in large quantities, it is still difficult to control their quality and purity, which for the moment limits the uses to which they can be put. But Richard Smalley, a professor of chemistry at Rice University in Houston, is convinced that within the next decade these problems can be overcome and production costs will drop.

However, some companies and researchers now hope that they will not have to wait that long, because it has emerged that a wide variety of other materials will also form nanotubes with useful properties. These may not be as potentially versatile as carbon ones, but for some applications—such as sensors, electrical components and lubricants—nanotubes or even nanowires made from other materials may be even better.

If just one nanoscale structure can have so many possible applications, it is clear why nanotechnology in general is causing such excitement. There are a host of other structures, and ways of putting them together, that also offer immense possibilities for new materials and devices.



One nanoparticle that is already being put to work is the quantum dot. Quantum dots are crystals made up of only a few hundred atoms. They can be produced from many materials and have the useful property that they can be made to fluoresce in almost any colour. Because they are so tiny—about the same size as a protein molecule or a short sequence of DNA—they can be used as probes to track reactions in living cells.

These tiny light tags are helping researchers in drug discovery, medical diagnostics and in the analysis of gene expression. As they can reveal exceptionally small quantities of biological molecules, they could be used in sensors that are better than existing technology based on DNA probes. So within a few years, quantum dots may begin to appear in over-the-counter diagnostic products.

Quantum Dot Corporation, of Hayward in California, launched its first product—a quantum dot attached to a specific biological molecule—two years ago. Since then, it has generated several million dollars of revenue, some from pharmaceutical giants such as AstraZeneca, Pfizer and GlaxoSmithKline.

There are plenty of other nanoscale technologies competing to build tiny sensors, for example to detect infection, which is likely to become much easier in the next three to five years. One technology uses minute particles of gold attached to DNA fragments that bind to the genetic material of pathogens, such as viruses or bacteria. When a sample of blood containing the pathogen is placed between two tiny electrodes, the gold particles close the circuit between the electrodes, revealing the presence of the pathogen.

John Ryan, a professor of physics at Britain's Oxford University, explains that nanotechnology can probe biological processes at the single-molecule level. This will be useful in all sorts of things from medicine to security, identifying tiny quantities of explosives, biological agents or even

chemical weapons.

Another application for nanoparticles could be the enhancement of medical imaging. For example, iron particles might improve the quality of MRI scans. Nanoparticles could also be used to deliver drugs and genes to patients, allowing medicines to be taken in a more convenient form. In fact, there is a long list of areas in medicine that could benefit from the technology. After all, the constituents of human cells are also nanosized objects, so it seems likely that the tools and products of nanotechnology will prove helpful.

Yet another important area likely to benefit from nanotechnology is information technology. Within three years or so, nanotechnology could bring big improvements in the amount and types of computer memory available. And the new technologies being developed are likely, in the longer term, to bring big changes in computer logic chips.

Moore and more

People have got used to the idea that with each generation of computer chips, both performance and cost improve. This is done by shrinking components and cramming in more transistors per square inch. But for some time now the pundits have been saying that Moore's law, as the process is known, could not go on for ever.

Ten years ago they predicted that the complementary metal-oxide semiconductor (CMOS) process, by which the vast majority of the world's silicon chips are made, would reach its limits at 100nm. Today, all the big chip manufacturers, including Intel and Transmeta of Santa Clara, California, and AMD of Sunnyvale, are producing parts with nanoscale features. Paolo Gargini, Intel's director of technology strategy, says that by the end of 2005 he hopes to be producing parts with 35nm components, and his laboratories can make features as small as 10nm.

Whether or not chipmakers are already in the realm of nanotechnology is a matter of debate. True nanotechnology must take advantage of the novel properties that arise at that scale; simply making things smaller does not count. But Intel has demonstrated a new technique—for pulling apart silicon atoms to speed up the flow of electrons—that would surely qualify.

Chip manufacturers have been ingenious at prolonging the era of the silicon chip, and Dr Gargini thinks they can continue doing so for about another decade. It is not so much the difficulty of making things increasingly small but the cost that is the limiting factor, because every generation of chip fabrication requires a bigger injection of capital to build more precise manufacturing tools. So if self-assembly can be used to put together logic and memory chips from the ground up, nanotechnology will come into its own.

Companies such as Intel have a multi-billion-dollar capital investment in their production equipment. They would rather use nanotechnology to extend the life of their chips than build entirely new ones. One possible technique might be to grow tiny tubes and wires made from silicon, germanium or carbon on the surface of chips to allow electrical charge to flow with less heat. This, says Dr Gargini, might extend the life of CMOS to 2015-25.

Logic chips are much more difficult to make than those that store memory. They have to do complicated things such as adding, subtracting and multiplying, whereas memory merely has to store information in neat rows. Because making memory chips is simpler, and because lots of different companies are working on ways of harnessing nanotechnology for this purpose, a revolution in this area is closer at hand. Hewlett-Packard (HP), a Silicon Valley veteran, is only one of the companies looking at creating a new type of memory, using individual molecules as components in switches and transistors.

Philip Kuekes, a researcher at the firm, thinks it will be cheaper to design and build devices taking advantage of effects that become predominant at the quantum scale than to try to overcome those effects with devices designed at larger scales. He is working on chemical tricks to lay down a regular grid of nanoscale wires only a few atoms thick. Between two layers of these grids will be one layer of switches a single molecule thick. If a logic chip could be made this way, it would hold tens of billions of logic elements, compared with 50m on existing chips.

But that is only one of a range of promising technologies. In Zurich, IBM is building a memory device known as Millipede that can store data at such density that 25m printed textbook pages could be put on to a postage stamp. Such developments promise non-volatile memory (the kind that retains information with the power off) so large that computers may no longer need hard drives.

Lighting-up time

The last big area tipped to benefit from nanotechnology is energy, both through its more efficient use (particularly in lighting) and through more effective ways of generating electricity. Clayton Teague, director of the National Nanotechnology Co-ordination Office in Arlington, says that nanoscale particles used in new solid-state lighting could cut the electricity used for illumination by up to 50% by 2025. Ordinary light bulbs would be replaced with improved versions of light-emitting diodes (LEDs) that emit bright white light.

At General Electric, researchers are trying to improve the structure of phosphorus to make fluorescent lighting more energy-efficient. And Cerulean International in Oxford is marketing a nanoparticulate diesel additive that gives an improvement in fuel economy of up to 10%. Many other companies are working on better catalysts via nanostructured materials.

Nanotechnology should also bring energy savings from more streamlined manufacturing. Tyler McQuade, a researcher at Cornell University, is working on ways of simplifying complex multi-stage drug manufacturing processes by encapsulating the different chemicals involved in nanoscale spheres. He thinks he can manufacture Prozac in a single step with little waste. Pfizer, he says, generates 25kg of waste for every 1kg of product.

Nanotechnology may also help to bring energy technologies such as fuel cells to market. Cheap and efficient solar cells look within reach, using newly developed materials to replace the fragile and expensive silicon-based wafers currently in use. Researchers in companies such as Nanosolar, in Palo Alto, are developing materials that convert light into electricity and can be sprayed or printed on to a flexible plastic sheet.

Nanotechnology is still in its infancy, although over the next few years an increasing number of products are likely to incorporate it in some way. But some of the longer-term benefits of the discoveries made today will not become apparent for decades. Mr Meyyappan at NASA tells the story of Herbert Kroemer, who 40 years ago was working on an obscure bit of semiconductor theory at America's RCA. No one, not even Mr Kroemer himself, had the slightest idea that one day this work would lead to a technology that has become ubiquitous in lasers in everyday objects such as CDs and DVDs.

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Fear and loathing

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Some of the worries about nanotechnology are rational, some not

NOT long ago Ella Standage was woken by a bad dream about nanobots. She was terrified that nanoscale machines might replicate uncontrollably and turn the entire planet into grey goo. Ms Standage is not the only one to worry about such imaginary horrors, but at least she has an excuse: she is only four years old.

The grey-goo idea goes back to a prediction by Eric Drexler, chairman of the Foresight Institute, a nanotechnology-policy group in Palo Alto, that one day all manufacturing would be done by very tiny robots. He thought that given the correct plans, these minute devices would be able to produce any item—an engine, say, or a pair of jeans—from nothing more than a feedstock of atoms.

For this plan to work, though, these robots would have to be able to make more of their own kind, otherwise things would take far too long to build. Mr Drexler thought these hypothetical nanobots would have to be self-replicating, and gave warning that care would have to be taken to ensure they did not replicate out of control. This idea launched a wave of public concern. If these nanobots started making copies of themselves by scavenging materials from their environment, it was suggested, they would eventually become visible to humans as a seething mass of tiny robots, or grey goo—and might ultimately consume the entire planet.

Little wonder that nanobots have become a favourite new bogey in everything from children's cartoons (where Ms Standage learned of them) to films. In vain do scientists protest that as yet nobody knows how to build a self-replicating robot of any size. They have also put forward various theoretical reasons why there could never be such a thing. For example, they ask, how would those robots get the energy to survive? But lack of feasibility is no obstacle to the imagination, and the idea of nanobots fits well with contemporary fears about out-of-control science.

Frankenparticles

However, interest in grey goo seems to be on the wane as more serious concerns about the potential toxicity of nanoparticles are emerging. It is already clear that some manufactured nanoparticles are harmful to mice and fish. Ken Donaldson, a professor of respiratory toxicology at the University of Edinburgh, says that nanoparticles and nanotubes are likely to be far more toxic than the same chemical in larger form because smaller particles have a greater surface area and are far more reactive. Being so tiny, these particles may be able to penetrate cells and evade the human immune system. When inhaled, says Mr Donaldson, fine carbon particles are able to enter the blood and the brain. Last year Swiss Re, an insurance company, published an alarming report on the possible dangers of nanoparticles and the liability issues that could arise from products using them.

However, a report last year from Britain's Royal Society said that in most cases people's exposure would be limited: where nanoparticles had been used as raw materials, ingredients or additives in a product, they would usually be contained within a composite or fixed to a surface. Indeed, nanoscale materials have been used for years, for example in computer hard drives, without causing any problems. If governments, industry and scientists continue to take the issue seriously, creating new nanoparticles seems no more risky than creating new chemicals.

Besides, nanoparticles are already all around us: the air is full of them, from the exhaust of diesel engines, cigarette smoke, hairspray, burning candles and toast. People create and use all sorts of nasty toxic chemicals every day. Moreover, many willingly have their faces injected with botox, a highly toxic substance, purely to indulge their vanity.

In fact, toxic nanoparticles will have their uses. Scientists are already trying to wrap them in harmless coatings so they can be used to fight diseases or destroy cancerous cells. The tailored delivery of a toxic nanomaterial to treat cancer would be far preferable to existing methods that flood a patient's entire body with toxins. The ability of nanoparticles to cross the blood-brain barrier may also turn out to be useful because at present it is very difficult to get drugs across that barrier. Yet more information about the toxicology of these materials is urgently needed, and a great deal of work is already under way.

Even so, one small but vocal anti-nanotechnology group, the Action Group on Erosion, Technology and Concentration (ETC), has called for a complete moratorium on the use of synthetic nanoparticles such as quantum dots, nanowires and nanotubes. ETC, based in Canada, is a small fringe group of activists, but hogged the headlines when its concerns were picked up by Britain's Prince Charles.

Most advocates of nanotechnology say that a ban would stop research to assess and mitigate any risks. In June last year, a group of nanotechnology experts from 25 countries met in Virginia under the auspices of America's National Science Foundation to discuss how nanotechnology could be developed responsibly. Most of them agreed that no moratorium should be imposed because it would prevent any risks from being assessed.

Even Jim Thomas, ETC's programme manager, who is based in Oxford, thinks this aspect of

nanotechnology is “a manageable issue”, and hopes that the debate will not be about health alone. What really troubles ETC is “corporate concentration”: that companies involved in nanotechnology are acquiring too much power. And ETC is not alone. In July last year a British pressure group, Corporate Watch, launched a project to map the nanotechnology industry in order to provide campaigners with “individual corporate targets”. In some of its literature, under the headline “Nanotech is Godzilla”, the group talks about the “dark side of nanotech: hazardous substances, military applications and a huge leap in corporate power”. Nanotechnology, like GM, seems to have become a handy tool for corporation-bashing.

Do such fringe groups matter? The lesson of the debate over genetically modified (GM) food was that they can be crucial in influencing broader public opinion, especially where there are worries about human health and the environment. Some of the groups that were involved in successful protests against GM are spoiling for a fight over nanotechnology too.

Pay attention

Moreover, there are signs that some of these concerns are being taken up by more mainstream voices. James Wilsdon, head of strategy at Demos, a British-based think-tank, thinks that nanotechnology needs to be “opened up for discussion”, and questions should be asked such as, “What is the technology for? Who controls it? Who will take responsibility if things go wrong?” And Britain's Cambridge University recently recruited a staff ethicist at its Nanoscience Centre. The head of the unit, Mark Welland, says this is an experiment, aimed partly at ensuring that their scientists take ethical concerns on board. But it also allows the unit to engage with groups such Demos and Greenpeace, and cleverly allows it to be part of the debate rather than its subject.

Many see parallels between GM and nanotechnology, and there have been warnings that the public could reject nanotechnology, as it did GM in Europe. But there are good reasons to think that this time the response will be different.

The main one is that on nanotechnology the views of pro-environment, pro-poor and anti-corporate groups are not aligned. For example, two big environmental groups, Environmental Defence and Greenpeace, are cautiously optimistic about the technology. Doug Parr, chief scientist at Greenpeace, has some concerns, including the health and environmental risks of nanoparticles and its potential use for military purposes. But the very scope of nanotechnology makes it difficult to oppose. As Mr Parr says, “We still don't have a policy on nanotechnology; you cannot on something that is so diverse.” And he adds, “Increasingly we recognise some good things can come from it.” One of the things Mr Parr has in mind is that new materials might bring down the cost of solar cells and thus make solar energy viable and even lucrative.

In fact, nanotechnology has many potential environmental benefits, which makes it hard for green groups to oppose it in principle, as they did with GM. Besides those energy savings, specialised nanoparticles or porous materials might be used to detoxify polluted water, land and even air. And greens can hardly accuse the technology of trying to do something “unnatural” when humans have been modifying substances to create new materials since the Bronze Age.

Pro-poor groups already worry that new materials might result in big changes in demand for commodities such as copper, cotton or rubber, but they too will find nanotechnology hard to oppose because of the benefits it may bring. For example, vaccines might be encapsulated in nanomaterials so that they no longer need to be refrigerated, and water desalination could be made cheaper.

Groups concerned with developing countries are also worried about maintaining access to such technology, pointing to the race now in progress to buy up rights to the key areas of

nanotechnology in the hope of bagging a valuable future patent. This may well be a problem, although not one that is unique to nanotechnology. But the battle is not being fought along traditional rich-versus-poor lines; indeed many developing countries are heavily engaged in nanotechnology. Among the more unexpected countries on the list are China, India, South Korea, Brazil, Chile, Argentina, the Czech Republic, Mexico, Romania, Russia and South Africa. Even little Costa Rica is investing in this area.

Because the technology is so new, all these countries see an opportunity for getting a slice of the action, as well as a way of solving long-standing problems. One Indian group is working on a prototype kit for detecting tuberculosis, and the Chinese have developed a scaffold for broken bones that is now being tested in hospitals.

For pro-poor groups, the fight against GM was essentially a fight against America, and more specifically against Monsanto, the company that came to symbolise GM. But nanotechnology already involves a wide range of participants, including the governments of many poor countries. A pro-poor group would probably not be able to exercise much leverage against the nanotechnology research of a country such as China.

Fears that the public might reject nanotechnology have allowed some groups to try a new tack: telling scientists, companies and governments that if they want their technology to be widely accepted, they must “democratise” it. What exactly that means is not clear, except that they are trying to harness public opinion to serve their own particular agenda.

In fact, nobody really knows what the public wants from nanotechnology. According to two recent surveys in America and Britain, most people do not even know what it is. And although they are unlikely to reject it outright once they find out, pressure groups will certainly be able to sway public opinion on some aspects of it. Companies working on nanotechnology applications in new products will need to bear that in mind.

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Downsizing

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Companies both large and small hope to make big money from tiny particles

AT THE Palo Alto headquarters of Nanosys, a nanotechnology start-up, Stephen Empedocles, the director of business development, is demonstrating some of his gee-whizz technology. His exhibit is a flat disc, where the surface on one side has been designed with a structure at the nanoscale that repels water. Dr Empedocles puts a few drops of water from a pipette on to the non-modified side. The droplets bead and cling as they would on the surface of a polished car. On the hydrophobic side, however, the droplets bounce and roll off like high-speed ball-bearings. They land wetly on your correspondent's sock.

At the moment, Nanosys is one of the most talked-about start-ups in nanotechnology, but not for the reasons it would like. What it wants people to discuss is its library of materials with pre-determined characteristics (such as hydrophobic surfaces), made from an array of proprietary nanostructures. Instead, it has been getting lots of publicity for its attempt to go public last year. Its offering of 29% of its shares, at $15-17 a share, would have valued the company at well over $300m, but the issue was pulled because of poor market conditions at the time.

One of Nanosys's main assets is its intellectual-property portfolio, which is broader than that of most nanotechnology start-up companies. It was this portfolio that the market was being asked to

value last summer. The company does not think that potential investors were put off by its filings with America's Securities and Exchange Commission, which said that it did not expect any products to emerge for several years, if ever, and “may never achieve profitability”.

However, some in Silicon Valley think it was a good thing that the initial public offering did not succeed. Scott Mize at the Foresight Institute, a pro-nanotechnology think-tank, says the company tried to go public too early and its lack of products and revenues would not have supported stock prices.

Vinod Khosla, a partner in Kleiner Perkins Caufield & Byers (KPCB), a large venture-capital house, says the most important requirement for any technology IPO is predictability. Revenue is less important, he says, as long as the firm can convince investors that it will arrive in time. By and large, argues Mr Khosla, there is not enough accumulated experience in nanotechnology to be able to tell how long it will take to get products to market.

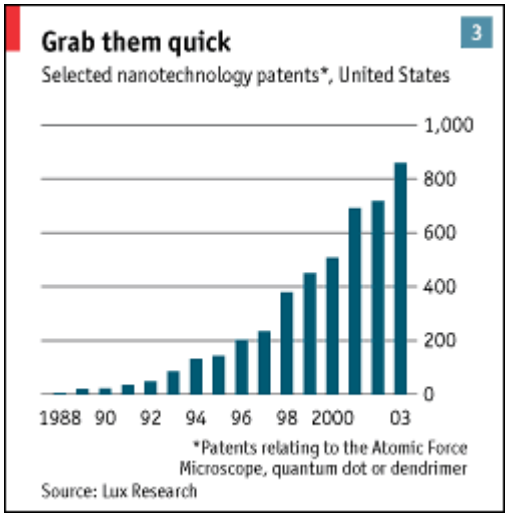
One reason for that uncertainty is a huge proliferation of patents. Between 1976 and 2002, about 90,000 nanotechnology patents were registered with America's patent office alone. Some analysts have issued warnings about an “intellectual-property land-grab” and predicted trouble ahead because of the breadth, and overlapping nature, of some of the patents.

Matthew Nordan, at Lux Research, the nanotechnology consultancy in New York, sees an impending war over patent infringements where lawsuits will be flying. The areas most likely to be affected are carbon nanotubes and quantum dots. IBM, for example, holds a key bit of intellectual property on a method of producing carbon nanotubes. The company is rumoured to have more lawyers than engineers working on nanotechnology. But for the moment there is no point in anyone suing, because nobody has yet made any real money from these nanoparticles.

Dynamite in small packages

If Nanosys's IPO had been successful, it might have paved the way for a number of other companies waiting in the wings. There is much excitement about nanotechnology's potential for existing and new businesses, but nobody wants to see this potential ruined by early hype.

Some also feel jittery about another technology-driven stockmarket bubble so soon after the dotcom bubble. The most basic things driving speculation, fear and greed, have not gone away. And there seem to be plenty of private investors who view the dotcom era as a missed opportunity and want something, anything, to invest in. So far, though, despite the billions of dollars being spent on nanotechnology research, there are only a handful of public companies in the sector, and most of these are small.



Josh Wolfe, co-founder of Lux Capital, a venture-capital firm, and editor of the *Forbes/Wolfe Nanotech Report*, says a number of firms are “nanopretenders”—companies that put a “nano” in their names but actually do things at larger scales. One of them is Nanometrics, a company in Milpitas, California, that makes tools at the microscale (1,000 times larger than the nanoscale). Another is Nanogen, in San Diego, which creates gene chips far larger than the nanoscale. Its share price has been volatile.

Even professional investors can get the sector wrong. Merrill Lynch, an investment bank, was left

red-faced after the launch of its nanotechnology tracking index in April last year when some of the firms it had picked turned out not to be nanotechnology companies after all and had to be dropped. At the time the index was announced, every company in it got a boost, but six months later share prices were down by a quarter. The same thing happened to the shares in a nanotechnology index launched by Punk Ziegel, another investment bank.

At KPCB, Mr Khosla is worried about indices. “When companies like Merrill Lynch start having a nanotechnology index, I think that is getting into the hype cycle for which a lot of people got into a lot of trouble during the internet bubble.” When people start getting interested, he says, fund managers decide that some proportion of their investment should be in nanotechnology. A bubble gets going when everybody starts piling in, trying to buy stocks that do not exist, he adds. “To me, an index is just an example of hyping.”

If there is one thing everyone agrees on, it is that nanotechnology is neither an industry nor a market. Lumping together different nanotechnology firms may be as sensible as assembling a group of firms whose names start with Z. A company selling nano-improved fabrics has little in common with one developing solar cells. To add to the problems, some of these indices include big companies for which nanotechnology is only one of many activities.

It is easy to see why a nanotechnology bubble might form, but if so, it will be nothing like as big as the ill-fated internet one, for several reasons. One of them is offered by Steve Jurvetson at Draper Fisher Jurvetson, a venture-capital firm based in Menlo Park, California: the number of people who can enter the business is limited by the number of science graduates available. In America, there is currently a shortage of science PhDs. Business-school graduates working in banking or consulting cannot start nanotechnology companies in the way they created new internet companies.

Another anti-bubble factor is the high capital cost of setting up business in nanotechnology. Start-ups need many millions of dollars to pay for equipment, proof of concept and salaries for highly trained staff. Mr Jurvetson's investment firm specialises in investing in early-stage nanotechnology companies. All of them, he says, are spun out of university or government labs, not Silicon Valley garages.

And venture capitalists currently appear to be in no mood to fund flaky proposals. Indeed, venture-capital funding in nanotechnology actually declined between 2002 and 2003. At one nanotechnology get-together last year, venture capitalists complained that there was more investment capital available than there were good ideas to fund.

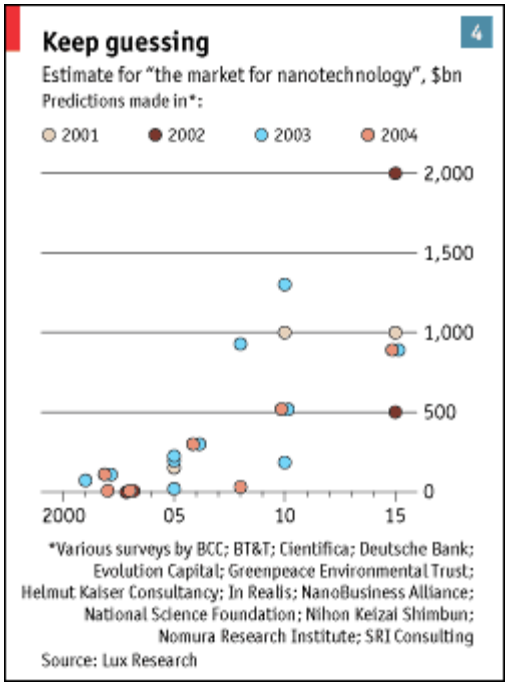
Take your pick

One frequently repeated nugget of wisdom in the nanotechnology business at the moment is that the real money is in making the picks and shovels, as it was in an earlier Californian gold rush. The pick-and-shovel manufacturers in nanotechnology are making tools such as microscopes, manipulators and instruments for working at the nanoscale. They include microscope-makers such as Veeco Instruments of Woodbury, New York; FEI of Hillsboro, Oregon; and smaller companies such as Infinitesima of Bristol, England.

Everyone working in nanotechnology, whether at the lab bench or at a chip manufacturing company, needs to see where they are putting their atoms. But there are also companies developing new lithography processes, for writing and printing at the nanoscale, which are likely to be important in manufacturing.

So how big is the nanotechnology industry as a whole?

There are plenty of estimates, but they vary from tiny to huge (see chart 4). Mr Nordan at Lux Research explains why: “The conventional wisdom here is that there's something called the nanotechnology market that has things in it called nanotechnology companies that sell nanotech products. All of these things are wrong.”



That has not stopped him from trying to quantify this non-existent entity in a recent report. He divides it into three parts: nanomaterials (tubes, particles, dots), nanointermediates (products made of these materials such as films, memory, fuel cells, solar cells) and nano-enabled products (such as the Chevrolet Impala car with body mouldings made of nanocomposites). In 2004 these three sectors added up to $158 billion in product revenue, most of it from the semiconductor industry.

In the next decade, says Mr Nordan, nanotechnology will be incorporated into products worth $2.9 trillion, and most of this revenue will be from new and emerging nanotechnology. But such estimates have to be treated with caution. They would include a $30,000 car with $200 side panels improved by nanotechnology.

All the same, this kind of work is useful because it gives an indication of where money could be made. Most nanomaterials, says Mr Nordan, will rapidly become commodities, with operating margins in the high single digits—the sort of figures typical of specialty chemicals. Ten years from now he would expect this business to be worth about $13 billion—a tiny share of the market for materials in general. He says that new materials will not be able to command large margins because that would make the economics for downstream manufacturers unattractive. Margins on nanointermediates and nano-enabled products, he predicts, will be similar to those in traditional product categories. For example, the margins on drugs will be far higher than those on clothing.

Which particular companies are likely to do well? Traditional wisdom has it that start-up companies are the most likely to discover the new technologies that will offer better performance and lower costs. Big companies such as Intel and Sharp, with multi-billion-dollar investments in plant and equipment, are thought to be resistant to revolutionary change, whereas small companies can win by using entirely new, “disruptive”, technologies that make large existing investments redundant.

Nano a-go-go 5

Some interesting nanotechnology companies to watch

Company	Technology
Konarka, Lowell, MA	Photovoltaics
Nantero, Woburn, MA	Non-volatile RAM using carbon nanotubes
QinetiQ Nanomaterial, Farnborough, England	Specialty chemicals and nanopowders
Dendritic NanoTechnologies, Mount Pleasant, MI	Nanoparticles for drug encapsulation, delivery and release
Quantum Dot, Hayward, CA	Nanocrystals for life-science research
Frontier Carbon Corporation, Tokyo	Specialty chemicals and carbon nanotubes
Molecular Imprints, Austin, TX	Nanolithography
NanoInk, Chicago, IL	Dip pen lithography
Zettacore, Denver, CO	Molecular memory
Zyvex, Richardson, TX	Tools, materials and structures for research and manufacturing

Source: Company websites

What is different about nanotechnology is that the next disruptive idea could quite easily come from a big company rather than a small one. Large firms are well aware that the technology will provide the basis for many new and improved products in the future, and are investing heavily to stake their claims, but often choose to keep quiet about it.

Sometimes their nanotechnology research programmes take them into unfamiliar territory. General Electric, for example, is looking at iron nanoparticles that might be useful in medical imaging. Future discoveries could come from unexpected places, because a patent on one aspect of a nanoscale structure could be useful in applications from IT to pharmaceuticals.

In the next decade and beyond, nanotechnology will bring wave upon wave of new discoveries. Some IPOs have been delayed by the Nanosys hiccup, but there were not that many waiting in the wings. Many of the interesting new companies are still four or five years away from going public. And some of these may well be bought up by bigger companies, rather than coming to the market.

Some people think that nanotechnology is likely to lead to massive social, economic and technological changes. If its effects could be that important, should governments control and regulate it?

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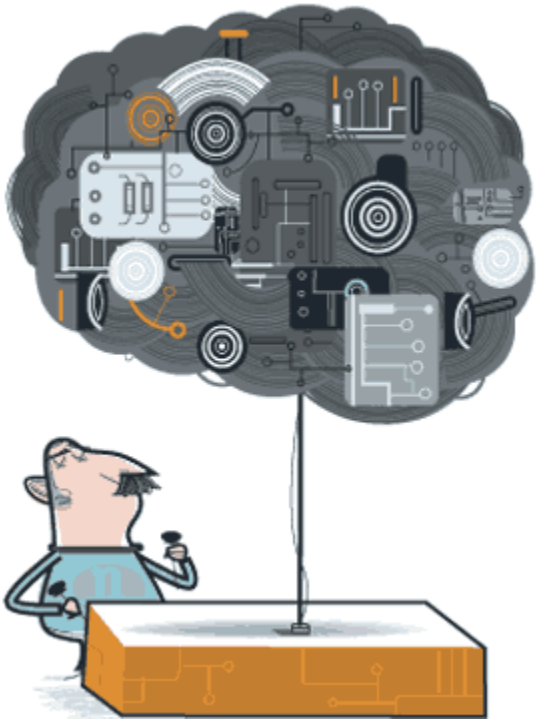

Nanotechnology promises great benefits, but safeguards will be essential

IN THE early 1800s, groups of English workers wrecked machines that they felt threatened their jobs. They were called “Luddites” after one of their leaders, a term that is now used for anyone who puts up resistance to new technologies. The odd thing about nanotechnology's Luddites is that they have started resisting before the technology has really established itself.

As people start to buy products involving nanotechnology, from odour-resistant shirts to window glass that repels dirt, they will realise that many of these new things are useful and harmless. And as awareness of nanotechnology grows, they will begin to understand that it covers a range of different ways of doing things, some of which carry some risk and others do not. As a result, the technology's detractors will probably become more nuanced in their complaints.

Nanotechnology has the potential to cause an industrial upheaval, just as electricity did in its time. Like electricity, though, it has so many and such diverse applications that it is unlikely to arrive in one huge wave, as nanotechnology's critics fear. Instead, there will be a series of smaller waves. Many of the innovations the technology may bring are a long way off, leaving plenty of time to prepare.

Fuzzy round the edges

That is just as well, because in the longer term some awkward questions will have to be resolved, mainly in an area known by the clumsy name of “convergence between nanotechnology, biotechnology, information technology and areas of cognitive science” (NBIC). Scientists have noticed that the divisions between these areas are disappearing. For example, if a new nanoparticle is inserted into a cell, is this biotechnology or nanotechnology? And if this molecule has a memory that can record events taking place in the cell, is this nanotechnology or computing?

If artificial molecules can be designed to serve as memory and logic, it might be possible to put a computer inside a cell. This could monitor and modify the way it works—for example, by detecting a molecule that might cause a disease, and taking action to ward it off. Scientists have already put together a primitive form of this kind of DNA computer in a test tube.

That also means, though, that one day it might be possible to program in enhancements to humans at cellular level. This is likely to cause concern. People will probably also worry about the emerging possibility of forming direct connections between machines and the human brain. And if convergence in these technologies could bring about a big increase in the human lifespan, that could have a profound effect on the nature of society.

For the moment, none of these futuristic things can be done. The more mundane applications available so far do not require new regulations in countries that already have strong legislation in areas such as chemicals, health and safety in the workplace, pharmaceuticals and the environment. However, it would be sensible for governments to examine all existing regulations to make sure that they provide adequate cover for the new products of nanotechnology.

For example, most countries require a new chemical to be assessed before it can be sold. But nanoparticles of an existing chemical may have properties so different from the bulk form that new nanoparticles should be treated as if they were new chemicals. Regulations may assume that the nanoscale version of a chemical behaves in the same way as it does in bulk, which it may not. A carbon nanotube could be thought of as graphite, but it also has a structure that resembles asbestos. It is essential to find out whether these tubes behave like pencil lead or like a highly dangerous mineral.

Other regulations may assume that the toxicity of a substance is directly related to the quantity that is present. Again, this may not be true. Nor is it safe to rely on rules that say companies need report only the known risks of a substance. Many nanoparticles are completely new to science. They are being developed at a very rapid rate, so they may present risks that nobody is even looking for yet.

Ambiguities in existing regulations will also have to be resolved. For example, medical devices and drugs may be covered by separate and quite different legislation. But is a nanoparticle that fights cancer a drug or a device? Even if, technically, it is classified as a device, most people would expect a cancer-fighting nanoparticle that they swallow to be regulated as a drug. Consumers would like to think that governments are reviewing existing legislation to make sure that special issues raised by nanotechnology are properly covered.

Companies, for their part, need to be open about the nanoparticles they are putting in their products, and about the kind of testing that has been done. There may be no reason to worry about such ingredients, but secrecy over testing is already raising suspicions among the technology's critics.

Patents are another area that needs careful thought. If most of the huge volume of new patents is

coming from universities, it is reasonable to ask how this intellectual property is licensed, and whether researchers and potential users in developing countries might be granted greater access, perhaps by making it free for research purposes and cheap for poor countries.

There is also the question of privacy. New cheap and small sensors may make it much easier to monitor things such as health and environmental conditions. For example, it may be possible to detect cancers when they are still tiny. That is all to the good. But a future generation of cheap, highly effective and ubiquitous sensors may also make it possible, say, to screen large numbers of people to find out if they have consumed too much alcohol. Such applications might be more controversial.

You can't vote on everything

The idea of “democratising” nanotechnology—giving ordinary people more of a say in what areas of science and technology should be pursued—is unlikely to be helpful. For a start, it is next to impossible to slow down or control some areas of science in one country when the world is so interconnected. Just look at the attempts to reach an international agreement to ban human cloning: many countries do not want a ban if it also prevents research involving therapeutic cloning which they do want, and different countries may take different views on whether something is useful or ethical.

Nanotechnology, like any new discovery, offers both risks and rewards. There will undoubtedly be some need to control its exploitation to minimise the risks, but there are also strong arguments for allowing the unfettered pursuit of knowledge: without it, innovation cannot flourish.

Twenty years ago, nobody could have foreseen that the invention of a new microscope would launch a remarkable new technology, perhaps a revolution. Scientists should be allowed to work with as little hindrance as possible to gain a better understanding of the object of their study—however large or small.

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Software takeovers

To buy or be bought

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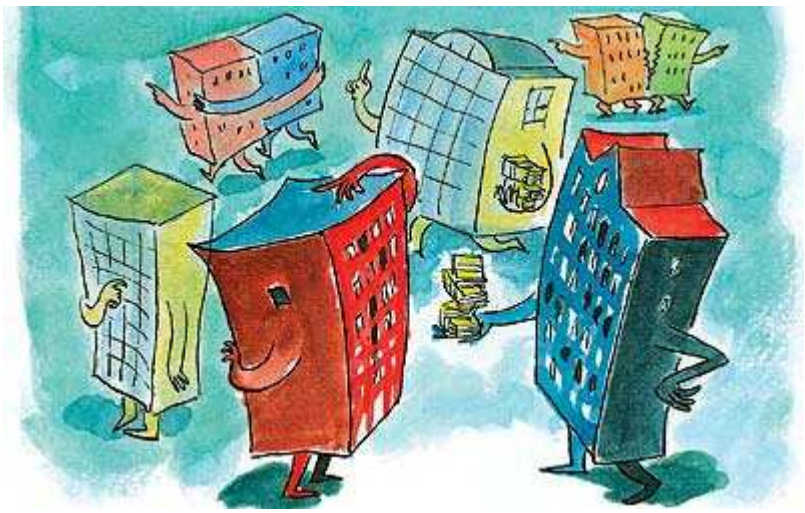

Everybody agrees that the software industry is starting to consolidate. But who will buy, and who will be bought?

TWO big software takeovers at the end of 2004 have prompted bosses in the industry to ask themselves whether they should buy or be bought in 2005. On December 13th, Oracle, the world's second-largest software firm, prevailed in its long struggle to buy PeopleSoft, a rival, for $10.3 billion. A few days later, Symantec, the largest vendor of security and anti-virus software, agreed to buy Veritas, which sells storage and data-recovery software, for $13.5 billion in shares.

These deals have “put blood in the water”, says Jonathan Schwartz, president of Sun Microsystems, a large vendor of hardware and software which is one of the companies that could find itself playing the role of either hunter or prey in the coming year. The danger, he says, is that there could be “mass confusion between activity and progress” as firms leap into “awkward combinations” for fear of being left behind. For instance, the logic of combining Symantec and Veritas, which have very distinct businesses, is not obvious. In the large and complex software universe, which mergers do make sense?

The first thing to realise is that consolidation is happening overwhelmingly in the market for business, rather than consumer, software. In the consumer market, despite the best efforts of the antitrust authorities (see article), Microsoft continues to dominate operating systems and office applications.

The market for business software breaks down into two broad categories. The first is applications. These are programs that automate corporate functions such as supply-chain planning, accounting, marketing and payroll, and that sit at the very top of the “stack” of software layers that run

corporate data centres. The second category, infrastructure, includes all the layers underneath, from “middleware” that acts as software glue between systems, down through various management and security layers to databases, storage software and operating systems.

A universe of opportunity

The applications category is already much closer to the end than the beginning of consolidation. That is because the merger of Oracle, which is primarily a database company but is also the world's third-largest applications vendor, and PeopleSoft, the second-largest applications firm, will produce a quasi-duopoly with SAP, the market leader. A few niche players, such as Adobe or Autodesk, may well remain independent, but many medium-sized applications firms, such as Siebel, a struggling maker of sales and marketing applications, look vulnerable. Even so, there are not many takeover targets left.

This means that most of the merger action will be in infrastructure software. Paul DiNardo, a technology specialist at Credit Suisse First Boston, an investment bank, likes to picture this industry as a galaxy with two dominant stars, Microsoft and IBM, each orbited by large and small planets—other firms with which they have technological affinities. Those orbiting Microsoft work mainly with its operating system, Windows, and its associated software, while those around IBM prefer non-proprietary “open-source” software, such as the Linux operating system.

One possibility is that aliens could invade from another metaphorical galaxy. Three possible invaders are Cisco (dominant in the networking galaxy), Intel (in semiconductors) and Dell (in hardware assembly). This scenario is not very likely. Dell knows that its success is due largely to its focus on manufacturing efficiency, not software. Intel is battling to keep its core market. Cisco is acquisitive, but its equipment sits mostly at the edge of corporate data centres, not at the centre.

It is more likely, therefore, that consolidation will occur within the software galaxy. One scenario is that the stars will gobble up planets in their orbit one at a time. For the small planets this is already happening—IBM has bought several small firms in recent months. Some medium-sized planets might also make good additions: IBM could buy Novell, a big Linux supporter in which IBM already owns a stake. But too much consolidation could cause concern among regulators, customers and partners. Microsoft briefly flirted with bidding for SAP (which is expanding from applications into infrastructure with its NetWeaver platform), before deciding that it would cause too much trouble.

Another scenario is that the biggest planets could try to become stars by buying medium-sized planets. Both Hewlett-Packard (HP), which is primarily a hardware-maker but also sells infrastructure software, and Oracle, whose core strength is still in infrastructure, are sporadically said to be talking to BEA Systems, a Silicon Valley neighbour that competes with IBM in middleware. HP has, however, barely digested the huge acquisition of Compaq, another hardware-maker, and is facing pressure from investors to split up and become more focused rather than to expand further. Larry Ellison, Oracle's boss, has suggested that integrating PeopleSoft will keep Oracle busy for some time.

That leaves a fourth scenario, in which the medium-sized planets combine. For instance, Steven Milunovich, an analyst at Merrill Lynch, thinks that it would make sense for Sun Microsystems, which sells an operating system called Solaris that is similar to Linux but competes with it, to buy a dedicated Linux vendor such as Red Hat or Novell. Similarly, EMC, a giant in data storage that has bought storage-software firms such as Legato, VMware and Documentum, could look for more targets. And even firms that do not have much in common could team up for the sake of scale, as Symantec and Veritas did.

What seems certain is that software consolidation will continue for years. Even in hardware, where the process has long been under way, it goes on still. IBM is selling its personal-computer business to Lenovo, a Chinese company. Gartner, a consultancy, predicts that three of the top ten PC-makers will be gone by 2007. The software industry is still behind hardware in this respect and so has much further to go. Expect plenty more blood in the water.

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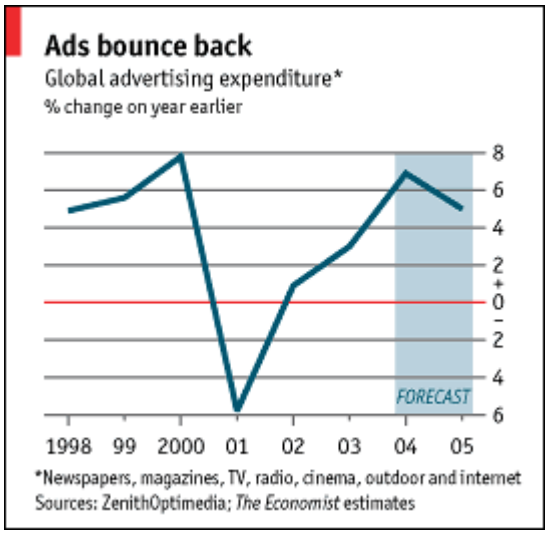
Advertising

Back on the up

Dec 29th 2004
From The Economist print edition

A revival in advertising spending



ONE year ago, the advertising industry was still struggling to find its feet following the slump it entered in 2001, when the bursting of the technology bubble brought about an abrupt collapse in ad spending. Even as spending began slowly to grow again, some forms of advertising seemed no longer to be working. Some advertisers abandoned traditional ads for other forms of marketing, such as in-store promotions, direct mail or outdoor posters. Some also turned to the internet, and in particular paid-for links on search sites such as Google or Yahoo!. Now, however, adland is bouncing back unambiguously, even if it is still far from business as usual.

Worldwide advertising expenditure grew by almost 7% in 2004 to $370 billion, estimates ZenithOptimedia. As this was well above global economic growth, the consultancy says it shows that the industry is recovering strongly—just as it always has done after previous slumps. Historically, advertising expenditure has tended to fall further when GDP declines, only to recover faster when economies pick up.

The ad market in 2004 was boosted by some special factors, such as a presidential election in America and the Olympics. Yet ad spending will grow by around 6% in 2005, predicts Robert Coen of Universal McCann, a media specialist. He thinks this will come about as firms become more aggressive in their battles for market share and polish brands that lost ground to cheaper competitors during the slump. Developing economies will help. By 2011, Zenith predicts, China will have overtaken Britain and Germany to become the third-largest advertising market in the world after America and Japan.

Television remains the most-powerful advertising medium, with a 38% global share of spending on major media in 2004. But things are changing. Many people nowadays watch cable or satellite channels rather than the main networks. Zenith expects TV generally to retain its overall share of the market through 2007, although it is uncertain about the threat posed by personal video-recorders, which can capture programmes for viewing at any time—and skip past ads.

Spending will also shift in other areas. Some people, especially young men, now spend more time surfing the internet than watching TV. The internet is the fastest-growing advertising medium. This reflects advertisers trying to reach both online shoppers (Amazon, one of the world's biggest e-tailers, had another record holiday season) and people searching for product and price information for goods they will buy in bricks-and-mortar stores.

The web now accounts for $8.7 billion (5.4%) of America's ad spending; world-wide, it accounts for 3.6%. This is tiny, but Zenith reckons the internet will earn more ad revenue worldwide than outdoor advertising (currently 5.2%) by the end of this decade. This will mostly be at the expense of newspapers and magazines.

Internet advertising is also maturing. JupiterResearch, which tracks the industry, says that specialist ad agencies now direct more than half of the spending on search-engine marketing in America, instead of the money going directly to websites. The internet is increasingly being incorporated into campaigns that use a variety of different media. Agencies now film ads especially for the internet and some big campaigns are tested online before being given the final go-ahead.

What advertisers like about the internet is that the effect of marketing messages can be more easily measured. At its most simple, a company will know how many people who have seen its ad have clicked through to a website, and what proportion of those has made a purchase. Far more elaborate tracking and targeting systems for online advertising are emerging all the time. This is leading some of the world's biggest advertisers to demand better ways of measuring the return on their investment in all forms of advertising. It is hard to exaggerate how big a shock having their performance properly measured will be to traditional advertising folk; even an entirely normal rebound in ad spending may not feel like a return to normality.

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Microsoft

Unbundled

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From The Economist print edition

Could the software giant's bundling strategy be coming apart?

Get article background

WHEN it comes to snatching victory from the jaws of defeat, Microsoft is a past master. The world's largest software firm tends to lose its legal battles, only to manipulate the subsequent regulatory environment so that courtroom defeats end up having little effect on its behaviour. But this disquieting pattern may now be coming to an end.

On December 22nd, the European Court of First Instance in Luxembourg ruled that sanctions against the company for antitrust violations should be imposed now, before Microsoft's appeal on the merits of the case itself is heard. Microsoft had wanted the European Commission's penalties, announced in March, to be suspended during the appeal. (It also hoped that its settlements with its industry opponents in the case, involving paying them large sums of money, would strengthen its hand.) But the court ruled that justice delayed would be justice denied. Microsoft must now change its behaviour in two ways.

First, it must provide in European markets a stripped-down version of its Windows operating system without a media player (the software that plays music and video on a PC). This is to prevent Microsoft's media format becoming the de facto industry standard by dint of the firm's operating system monopoly. Second, Microsoft must license technical information to rivals so their products can interface with its server software as efficiently as Microsoft's own products do. The commission will appoint a trustee to oversee these remedies, and has also fined the firm €497m ($600m).

Making Microsoft “unbundle” its media player is a symbolic victory: it is not certain that PC-makers will actually offer PCs with the stripped-down version of Windows. Yet it could set a precedent that will force Microsoft to unbundle other bits of Windows in future. That is why the firm was so keen to reach a settlement with the commission.

Microsoft's ability to dominate new markets by bundling software with Windows also faces a second threat, this time internal. With the firm's legions of programmers busy fixing security holes in the current version of Windows, the next version has been repeatedly delayed; it is now due in 2006. As it fights Google and Yahoo! in the field of search technology, Microsoft will not be able to use its usual trick to crush rivals by bundling its own search product into a new version of Windows. For this battle, at least, the playing field will be unusually level. Microsoft must compete on merit.

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Yukos, Putin and the oligarchs

Method and madness

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The tragicomic destruction of Yukos, and its legacy

AFP

Where the money is

IN THE end it was a classic Russian combination of the astonishing and the predictable and the predictably bad, and a fitting denouement to a campaign that has been as chaotic as it has been capricious. Following the forced auction of the main oil-production subsidiary of Yukos, the Kremlin has extended its influence in Russia's energy sector. Besieged for a year and a half, Yukos has finally and irrevocably been eviscerated; Mikhail Khodorkovsky, its former boss, whose political ambitions incurred the wrath of Vladimir Putin, Russia's president, is still in prison and on trial. The astonishing part involved an American court and a mystery shell company.

On December 19th, Yuganskneftegaz, which accounted for 60% of Yukos's oil-production capacity, was sold by the government for $9.35 billion, ostensibly to pay some of Yukos's huge tax bill. But the sale was not to Gazprom, a state-run gas firm that had seemed the likely buyer. Instead, Yugansk was bought by Baikal Finance Group, a hitherto unknown firm whose registered address in the town of Tver reportedly houses a grocery shop.

Big Russian corporate auctions are often brazen and bizarre, but the identity of the successful buyer is generally not a surprise. Rumours about the provenance of Baikal swirled around Moscow. Then, on December 22nd, Rosneft, a state-owned oil company, revealed that it had bought Baikal (and thus Yugansk) for an undisclosed sum. The chairman of Rosneft is Igor Sechin, a close confidant of Mr Putin. Thus the state took back Mr Khodorkovsky's prime asset in a way not unlike that in which he acquired his wealth in the first place. Mr Putin said that the process had adhered to the best market standards. Andrei Illarionov, the president's maverick economic adviser (at least for now), reportedly called it the “swindle of the year”.

Why Baikal and Rosneft, and not Gazprom? The most palatable explanation is a last-minute injunction secured by Yukos in a court in Houston, Texas, protecting the firm's assets while it filed for bankruptcy—part of Yukos's strategy of trying to force the Kremlin into openly using extra-judicial methods. The ruling, though questionable, scared off a consortium of western banks financing Gazprom's bid. In the end, Baikal was the only actual bidder. Rosneft, being state-owned, should enjoy sovereign immunity, even in a Texan court.

That is unlikely to stop Yukos and some of its shareholders suing it, the Russian government, the owners of Baikal (if they can be found) and Gazprom. Yet Yukos now looks comprehensively doomed. It once seemed likely that the firm's alleged tax debts and the attendant penalties would

conveniently equal the government's valuation of Yugansk. After the sale Yukos would have kept some assets to pacify minority investors. But the tax bill dwarfs the discounted auction price, and further expropriations now seem likely.

The Houston court has altered the fate of Yugansk only temporarily, because Rosneft is merging with Gazprom in a deal that will give the Russian government a controlling stake in the enlarged firm. The merger will produce a global energy giant, and an even stronger foreign-policy instrument for the government than Gazprom is now. However, the Yugansk auction may delay the merger for a while, and with it the liberalisation of Gazprom share ownership—to allow foreign investors to buy ordinary shares—that is supposed to follow it.

The anxiety induced by the Yukos affair has not been helped by another of Mr Putin's remarks about the auction. It had, he said, put right a wrong done in the privatisations of the 1990s—of which Mr Khodorkovsky was not the only beneficiary. Roman Abramovich, an oil baron turned soccer-club owner whose flamboyant lifestyle has helped to make him vulnerable to crowd-pleasing penalties, has already sold some of his Russian assets. There were rumours this week that Rosneft and a foreign partner were planning to acquire Sibneft, the oil company in which Mr Abramovich has a majority stake. Sibneft may yet face a back-tax bill of its own.

Investors who had hoped that the Yukos affair was a one-off vendetta against a troublesome and hubristic oligarch had already been distressed by new tax charges against Vimpelcom, a mobile phone operator listed in New York. Vimpelcom is neither a privatised company nor an energy firm, two of the factors that made attacking Yukos attractive to the Kremlin. The fracas may owe something to a rumoured spat between a government minister and a big Vimpelcom shareholder. Not “another Yukos”, then, but not an advert for investing in Russia, either.

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Face value

Germany's Arthur Scargill

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AP

Can Jürgen Peters, boss of Germany's biggest industrial union, defeat the forces of labour-market reform?

GERMANY'S company bosses increasingly yearn for their own version of Margaret Thatcher, a politician willing to fight the battles necessary to modernise the country's stagnating economy—and, above all, to end the privileges for workers that have become a serious obstacle to better corporate performance. Instead of a Chancellor Thatcher, bosses have had to make do with Gerhard Schröder who, despite his passage of the so-called “Hartz IV” labour-market reforms that take effect on January 1st, has been a half-hearted champion of change. But if there is as yet no sign of a German Iron Lady, there is now a prime candidate to play the part of Arthur Scargill, the reactionary trade unionist who became the perfect “enemy within”—iconic, populist yet ultimately easy to defeat—for Mrs (now Lady) Thatcher as she advanced her radical agenda. He is Jürgen Peters, boss of IG Metall, Germany's biggest blue-collar union.

Like Mr Scargill, Mr Peters has no time for the view that modernisation is irresistible and will destroy any unions that stand in its way. He has heard it all before. “We've been declared dead many times,” he says, dismissing those who stand up to him as “short-termist” and “neo-liberal”. His rhetoric only grew louder and more defiant during the past year as his union, and others, caved in time after time to the demands of cash-strapped companies for longer working hours without overtime pay.

Even without much political leadership to help them, German employers seem to have gained the

upper hand. Tougher times have made the public, including even workers in Mr Peters's 2.5m-strong union, increasingly willing to believe that Germany's traditional consensus-based industrial model, in which unions and bosses work more as partners than adversaries (in contrast to the confrontations more common in Britain and America), is now out of date. Co-determination, the established practice of worker and union representatives serving on a firm's supervisory board, is under fresh attack. Union leaders, once the agenda-setters in wage negotiations, seem increasingly irrelevant, forced by their own desperate members to abandon strident demands in the interest of saving as many jobs as possible.

Talking to Mr Peters you might think that none of this is happening. Forcing down labour costs is no solution to Germany's economic gloom, he says. Instead he wants some Keynesian demand: restoring the buying power of the masses is the key to reviving domestic consumption. “There isn't an economist who doesn't agree that our problem is internal demand,” he says.

In the past decade, membership of IG Metall has been falling by about 100,000 a year, because of factory closures, relocation of production to cheaper countries and a decline of the political left. Yet Mr Peters claims that the union rode out its deepest crisis 18 months ago, and is now “stable”. This stabilisation coincides with his leadership of the union, which he grabbed in August 2003 after a clash with his predecessor Klaus Zwickel. Less flamboyant and less militant, Mr Zwickel had reluctantly allowed Mr Peters to lead a last-ditch strike in east Germany that June, to fight for a 35-hour week. The workers in the east had no staying power. Mr Zwickel capitulated, to the fury of Mr Peters, who believed he was close to a deal. Mr Zwickel resigned. The more moderate Berthold Huber, whom Mr Zwickel had been grooming as his successor, stepped aside as Mr Peters was elected head of the union, albeit with an unusually low 66% of the vote.

“*Betonkopf* ” (blockhead) Peters, as some call him, is not in the least bit obstinate, he protests. There was a time, back in the 1980s, when he was known as a master of compromise. He helped to save 30,000 jobs at Volkswagen in 1984 by agreeing to a four-day week, lower wages and flexible working hours. Even as recently as three years ago he negotiated a deal with VW which let it build a non-unionised factory in Germany, using workers drawn from the ranks of the unemployed. He even claims that last year's unparalleled loosening of tariff agreements with several big firms demonstrated his ability to compromise, though many observers view them instead as evidence of a weakening of support for him among IG Metall members.

In 2004, Siemens, a big conglomerate, broke the dam by threatening to move two factories to Hungary unless the working week was stretched to 40 hours with no extra pay. Mr Peters called this “blackmail”, but backed down. Negotiations with DaimlerChrysler, Opel and Volkswagen were friendlier: the need to cut labour costs was clearer to the carmakers' workers.

The year of the blockhead?

In 2005 around 40 different union wage agreements are up for renewal. Employers hope to build on last year's triumphs over the unions by squeezing even more out of their German workforces. Yet Mr Peters thinks that already the pendulum may be swinging back in his direction. Company profits are rising, especially among those that export, he notes. “Wage-dumping”, says Mr Peters, by which he means cutting labour costs at home, is not the way for German companies to compete with central Europe—and certainly not with China and the rest of Asia. The sensible route is to boost innovation and to reduce ancillary labour costs, such as social insurance and taxes, he says.

Maybe. But German bosses want quicker fixes to their problems. Mr Peters remains undaunted. “I'd rather be seen as a hardliner than a soft-boiled egg,” he says. And yet this year will probably require more, not less, flexibility from union leaders. If he cannot show some, he may find himself

threatened by his own enemy within: Mr Huber, already tipped to replace Mr Peters in 2007, is more popular with employers and believes that Germany's unions urgently need to reinvent themselves. “Traditionalism isn't such a damned bad thing,” retorts Mr Peters. He may need a more forward-looking rallying cry than this to maintain the loyalty of his troops in the year ahead.

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Holy writ

It ain't necessarily so

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Alamy

Why people of the book have such trouble with language, truth and logic

“AND it came to pass in those days, that there went out a decree from Caesar Augustus, that all the world should be taxed. (And this taxing was first made when Cyrenius was governor of Syria.) And all went to be taxed, every one into his own city. And Joseph also went up from Galilee, out of the city of Nazareth, into Judaea, unto the city of David, which is called Bethlehem; (because he was of the house and lineage of David:) To be taxed with Mary his espoused wife, being great with child. And so it was, that, while they were there, the days were accomplished that she should be delivered. And she brought forth her firstborn son...”

Whatever meaning this well-known version of the Christmas story may have, it does not seem to be very accurate history. Father Jerome Murphy-O'Connor, a distinguished biblical scholar, lists the difficulties he sees. First, it is said elsewhere in the New Testament—and this is central to the story—that Jesus was born in the last days of his would-be persecutor King Herod, who died in 4BC. (The Christian system for dating Christ's birth was established at least three centuries later, so an error of a few years is not surprising.) But according to Josephus, a secular historian, the big census around that time (and the start of Cyrenius's governorship) took place in what Christians would call the “year of our Lord” 6 or, as today's secular historians now prefer, 6CE (common era).

The problems do not stop there. For example, when the Romans counted their people, they insisted that everyone had to stay put, so a last-minute dash from one city to another seems unlikely. And as a protectorate under Herod, Palestine would not automatically have been included in an imperial census.

As a Dominican monk, whose views on some things, such as the virgin birth of Christ, are conservative, Father Jerome is unfazed by these contradictions. “The Gospels should be read spiritually, but with critical intelligence,” he believes. Given that the two main accounts of Christ's birth—those of Matthew and Luke—are inconsistent, he prefers to rely mainly on the first, which

moves from Christ's origins in Bethlehem to his upbringing, after an interlude in Egypt, in Nazareth. Moreover, in all the biblical material about Christ's beginnings, Father Jerome and other scholars see a deeper meaning: Christ is both a blue-blooded monarch from the royal city of Bethlehem, and a poor boy from the hardscrabble town of Nazareth from which nobody expected anything good. Even under the watchful eye of Pope John Paul II, who has reaffirmed the unchangeability of the truths maintained by the church, and the church's role as interpreter of the Bible, such bold readings of the New Testament are permissible. “What the church insists on is the spiritual message of the Bible, not its literal truth,” says Father Jerome. If ordinary literal-minded worshippers said he was undermining their faith, he would conclude they were the victims of “bad preaching” and point out the impossibility of believing every word of an internally inconsistent text.

By no means all Christians would subscribe to this approach. For the 70m or 80m people in the United States who call themselves evangelicals, the Bible is “the inspired, the only infallible, authoritative word of God”, according to a definition by America's National Association of Evangelicals. So whenever the Bible seems inconsistent with beliefs held on other grounds, the instinct of an evangelical is to insist that the contradiction must be apparent, rather than real. Either secular historians are mistaken, or there has been some simple and easily rectifiable mistake—such as the mistranslation of a word—in the reading of scripture. Somehow the information received from holy writ and the evidence from other sources must be made to fit; and if that cannot be done, then the non-scriptural information must be dismissed.

One product of such intellectual contortions is “creation science” and an insistence on the literal truth of the proposition that God took seven days to create the world, with the evidence from fossils as a kind of decorative, but confusing, extra. Even wackier, from the secular viewpoint, is America's “biblical astronomy” movement which insists, under the guidance of a Dutch-born astrophysicist, Gerardus Bouw, that the sun goes round the Earth.

Even Jellicle cats?

Not all the adherents of evangelicalism would go that far. But most would assert that one of the biggest mistakes of Roman Catholic and Orthodox Christian teaching is their insistence on reading the Bible in the light of a sacred tradition, instead of going straight to the text. A Catholic or Orthodox Christian would retort that behind the evangelicals' approach lies a sort of muddled arrogance: it is not the Bible itself to which they are giving a virtually divine status, but their own, arbitrary interpretation of the text, which allows no debt to the spiritual labours of past generations.

Alamy

In some form or other, these inter-Christian quarrels sound familiar to everybody who treats a sacred text as the ultimate guide and inspiration for life, but also acknowledges other kinds of truth—the sort of truth based on empirical investigation, or everyday common sense. The problem arises in particularly acute form for the three faiths that profess belief in one God who made a covenant with Abraham, Moses and Noah.

It is true that the great Asian religions, Hinduism, for example, have a deep attachment to their sacred writings. But they also seem to assert, rather freely and unself-consciously, that the events described in, say, the Bhagavad-Gita (one of India's great religious poems) were unfolding on a different plane from everyday, banal reality. While allowing that these two planes—Earthly and divine—may intersect, adherents of Asia's faiths appear

to negotiate more easily between different levels of reality. For the monotheistic religions, the status, origins and interpretation of scripture have always proved trickier.

Why so? Perhaps because quite a lot of what these writings say is presented as historical fact, unfolding in a particular landscape. They speak of a God, ultimately beyond time and space, who nonetheless intervenes in human history at specific moments and places. They also tell of a God who spoke to man in words—words drawn from human language, but pointing to a reality transcending the human world. Directly or indirectly, the words of scripture are the word of God.

Hindus keep banality at bay

What place for the profane?

That leads to hard questions about where these scriptural words stand in relation to other kinds of words, and other kinds of truth. If believers insist on fencing off the words of scripture from all pronouncements in human language, then how can the words of scripture be discussed or interpreted? Is it possible to use “profane” or non-sacred words and methods to analyse, and understand better, a sacred text? And if it is not possible, how can a sacred text ever be understood? These are dilemmas that no follower of the Middle Eastern monotheisms can avoid.

All the monotheistic faiths have traditions and liturgical practices that underline the radical difference between a sacred text and any other form of writing and language. Nowhere is that clearer than in Islam, which teaches that the words of the Koran were dictated by the angel Gabriel to Muhammad over 22 years, early in the seventh century.

For any well-instructed Muslim, savouring the beauty of the Koran's classical Arabic is an overwhelming spiritual experience. A seminal moment in Islam's early days was the experience of Umar, who began life as a polytheist but later became caliph. On hearing the Arabic verses, he reported, “My heart was softened and I wept, and Islam entered into me.” In some degree, this describes every Muslim believer's experience. For a faith that insists on the impossibility of seeing God or representing God, the words of the Koran are the nearest that most believers get to experiencing the divine.

Alamy

There is a corresponding reverence for any paper or manuscript on which the Koran is written. Devout Muslims kiss the Koran before praying and are offended by the careless treatment of a book or even a single sheet of paper on which holy words are written. Looking at the mosaics of Christ, and the Arabic calligraphy, in Istanbul's Haghia Sophia—by turns a church, a mosque and now a museum—you would think the difference between Christianity and Islam was simple: the former was a religion of pictures and the latter a religion of beautifully written words.

Beliefs about the origins of scripture, and the right way to handle holy texts (literally and metaphorically), are also at the heart of the religion of ancient Israel. Orthodox Jews believe the first five books of the Hebrew scriptures, the Torah, were revealed to Moses on Mount Sinai. Another tradition holds that after the Jews returned from exile in Babylon, the scribe Ezra was enabled by divine inspiration to reconstruct the 24 holy books of the Hebrew

scriptures, along with many other writings that were too sacred for most human beings to receive. In traditional Jewish practice, a manuscript of the Torah is too precious to touch. It lies under a kind of mantle when carried in procession, and is often topped by a crown and a sort of high-priest's breastplate.

When words are as holy as that, you may ask, how can you even talk about them in ordinary language? Fortunately, perhaps, the Jewish tradition has its own answer: what Moses received was not merely the words of the Torah, but a body of oral law that provides guidance on how to understand and put into practice the truths of holy writ. For most Jews, this oral law set the basis for a creative legal tradition: it made it possible for rabbis in subsequent eras to interpret the Jewish revelation in practical ways, taking due account of circumstances.

Where exactly the line should be drawn between “the Torah made in heaven” and “the Torah not in heaven”—human interpretation—is something Jews have always argued about. But their tradition at least offers a framework in which such arguments can take place.

...while Jews don't touch the Torah

The hazards of secular scholarship

Muslims insist that their tradition also makes full use of reason and intellectual rigour in the understanding of sacred texts. In the early Middle Ages, when Christianity and Islam were struggling to find ways to reconcile divine revelation with human reason and investigation, Islam often seemed to fare better. There is intellectual discipline, of a specialised kind, in the tradition of inquiry into the authenticity of the hadith, sayings attributed to the Prophet. But all this tradition is based on one central premise: the authenticity of God's revelation to the Prophet, and the accuracy of the Koran as a rendering of that revelation in language both human and divine.

Can there be any meeting-point between those who believe in that book's divine origins and those who see it as a text like any other, to be analysed, deconstructed and set in historic context? And with due allowance for the failure of all translations, can there be any debate between Muslims and non-Muslims over what amounts to a relatively good rendering of the Koran into another tongue?

For Muslims who also aspire to be scholars in the secular world, these are difficult issues. In many parts of the Muslim world, merely asking open questions about the origins of the Koran would guarantee the inquirer an abbreviated life. Yet secular scholars do study the Koran, though most keep their heads down or write under a pseudonym. Many of these academics come from Germany, where secular analysis of the Jewish and Christian scriptures was born in the 19th century. For example, scholars at Saarland University have been analysing evidence from a huge stack of mouldering Arabic documents, discovered in Yemen in 1972. These promise, in the scholars' view, to show the Koran as an evolving rather than a static work. One bold German-based academic, writing under the pen name of Christoph Luxenberg, believes he has discovered a hitherto unsuspected influence of the Aramaic language, and of the teaching of Syrian Christians, on the

Bridgeman

Much-studied by laymen

Koran.

To say that the historically Muslim world is reluctant to examine the Koran and its origins in the spirit of secular academia would be putting it mildly. “Interrogating the text in this way is a very sensitive matter, and even if the interrogators are Muslim, there are significant red lines,” says Suha Taji-Farouki, the editor of a new set of essays on the Koran. Still, the very fact such a work has been published by a Muslim institution—the Institute for Ismaili Studies (IIS)—in partnership with Britain's Oxford University Press is a sign of growing, if gingerly, Muslim interest in engaging with academia.

The case of the grapes and virgins

Mohammad Arkoun, of the University of Paris, has long thought that Islam should “assume the modern risks of scientific knowledge”, arguing that Islamic tradition itself contains ample ground for a more open-minded approach to the Koran. His work is discussed in “Modern Muslim Intellectuals and the Qur'an”, a new collection of essays, some of which look at Islam's holy writ in the arcane terms of literary theory. This book tests the outer limits of a critical approach to sacred text—at least for those who are not shy of jargon and can tell heuristics from hermeneutics.

Some Muslim academics with a deep belief in the Koran as revealed truth have reservations about over-using secular tools. For them, using insights from, say, linguistics or sociology is legitimate as far as it goes—but may miss the point. Such tools can help define the form God's revelation assumed, but not in disclosing the content of the revelation, says Reza Shah-Kazemi, another IIS scholar, who will argue in a forthcoming book for the primacy of “spiritual exegesis” over other kinds. He takes the traditional view that only prayerful contemplation, and an ear for the inner as well as the outer meanings, can help discern the deeper significance of holy writ.

Alamy

...as, tentatively but increasingly, is this

Some Christian scholars make a similar point: reducing Bible study to literary criticism is about as sensible as studying a religious icon by analysing the chemical composition of its paint, or concentrating on the carpentry of a Stradivarius violin instead of enjoying the music. While untroubled, these days, by violence, the relationship between “faith and the academy” is not an easy one in the Christian world. In the theology departments of western universities there is a sullen truce at best between those whose aim is to deconstruct the Bible in the light of modern theories, from semiotics to feminism, and those who say that biblical studies should be of some value to those (such as the clergy) who will put them to professional use.

In any event, the terms of western academia's truce between the secular and religious are different from anything in the Muslim world. Nobody in a western university would argue for the truth of a statement on the sole ground that the Bible, or church tradition, asserted it. That may be good; but the resulting climate leaves no middle ground between naive fundamentalism and a secularism that refuses to engage with religious experience.

To which a secularist may ask, so what? Is there any reason why people who believe in none of the Abrahamic religions should follow their debates on how to read holy writ? In fact, there is. Take one example from Islam: Mr Luxenberg argues that the rewards the Koran promises to martyrs for their faith when they get to heaven is not “virgins” (72 of them) but a word that means “grapes” or “white fruit”. In a world where suicide-bombers are urged on by delectable prizes, that is a translation that matters.

Now a case from Christianity. Many evangelicals stress an apocalyptic verse in the second epistle of Peter which ends: “the Earth also and the works that are therein shall be burned up.” If it's all going to be consumed by fire, some evangelicals say, then why worry about pollution or climate change? But the oldest existing version of the New Testament, long preserved at St Catherine's monastery on Mount Sinai and now (most of it) in the British Library, has a different Greek verb for the Earth's fate: *evretesetai*, not *katakaesetai.* Instead of being burned up, the Earth will be uncovered, its true nature exposed. That, too, is a difference worth studying, for both believers and everyone else.

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Meritocracy in America

Ever higher society, ever harder to ascend

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Corbis

Whatever happened to the belief that any American could get to the top?

THE United States likes to think of itself as the very embodiment of meritocracy: a country where people are judged on their individual abilities rather than their family connections. The original colonies were settled by refugees from a Europe in which the restrictions on social mobility were woven into the fabric of the state, and the American revolution was partly a revolt against feudalism. From the outset, Americans believed that equality of opportunity gave them an edge over the Old World, freeing them from debilitating snobberies and at the same time enabling everyone to benefit from the abilities of the entire population. They still do.

To be sure, America has often betrayed its fine ideals. The Founding Fathers did not admit women or blacks to their meritocratic republic. The country's elites have repeatedly flirted with the aristocratic principle, whether among the brahmins of Boston or, more flagrantly, the rural ruling class in the South. Yet America has repeatedly succeeded in living up to its best self, and today most Americans believe that their country still does a reasonable job of providing opportunities for everybody, including blacks and women. In Europe, majorities of people in every country except Britain, the Czech Republic and Slovakia believe that forces beyond their personal control determine their success. In America only 32% take such a fatalistic view.

But are they right? A growing body of evidence suggests that the meritocratic ideal is in trouble in America. Income inequality is growing to levels not seen since the Gilded Age, around the 1880s. But social mobility is not increasing at anything like the same pace: would-be Horatio Algers are finding it no easier to climb from rags to riches, while the children of the privileged have a greater chance of staying at the top of the social heap. The United States risks calcifying into a European-style class-based society.

The past couple of decades have seen a huge increase in inequality in America. The Economic

Policy Institute, a Washington think-tank, argues that between 1979 and 2000 the real income of households in the lowest fifth (the bottom 20% of earners) grew by 6.4%, while that of households in the top fifth grew by 70%. The family income of the top 1% grew by 184%—and that of the top 0.1% or 0.01% grew even faster. Back in 1979 the average income of the top 1% was 133 times that of the bottom 20%; by 2000 the income of the top 1% had risen to 189 times that of the bottom fifth.

Thirty years ago the average real annual compensation of the top 100 chief executives was $1.3m: 39 times the pay of the average worker. Today it is $37.5m: over 1,000 times the pay of the average worker. In 2001 the top 1% of households earned 20% of all income and held 33.4% of all net worth. Not since pre-Depression days has the top 1% taken such a big whack.

More dynastic than dynamic

Most Americans see nothing wrong with inequality of income so long as it comes with plenty of social mobility: it is simply the price paid for a dynamic economy. But the new rise in inequality does not seem to have come with a commensurate rise in mobility. There may even have been a fall.

The most vivid evidence of social sclerosis comes from politics. A country where every child is supposed to be able to dream of becoming president is beginning to produce a self-perpetuating political elite. George Bush is the son of a president, the grandson of a senator, and the sprig of America's business aristocracy. John Kerry, thanks to a rich wife, is the richest man in a Senate full of plutocrats. He is also a Boston brahmin, educated at St Paul's, a posh private school, and Yale—where, like the Bushes, he belonged to the ultra-select Skull and Bones society.

Mr Kerry's predecessor as the Democrats' presidential nominee, Al Gore, was the son of a senator. Mr Gore, too, was educated at a posh private school, St Albans, and then at Harvard. And Mr Kerry's main challenger from the left of his party? Howard Brush Dean was the product of the same blue-blooded world of private schools and unchanging middle names as Mr Bush (one of Mr Bush's grandmothers was even a bridesmaid to one of Mr Dean's). Mr Dean grew up in the Hamptons and on New York's Park Avenue.

The most remarkable feature of the continuing power of America's elite—and its growing grip on the political system—is how little comment it arouses. Britain would be in high dudgeon if its party leaders all came from Eton and Harrow. Perhaps one reason why the rise of caste politics raises so little comment is that something similar is happening throughout American society. Everywhere you look in modern America—in the Hollywood Hills or the canyons of Wall Street, in the Nashville recording studios or the clapboard houses of Cambridge, Massachusetts—you see elites mastering the art of perpetuating themselves. America is increasingly looking like imperial Britain, with dynastic ties proliferating, social circles interlocking, mechanisms of social exclusion strengthening and a gap widening between the people who make the decisions and shape the culture and the vast majority of ordinary working stiffs.

It's sticky out there

All this may sound a bit impressionistic. But more and more evidence from social scientists suggests that American society is much “stickier” than most Americans assume. Some researchers claim that social mobility is actually declining. A classic social survey in 1978 found that 23% of adult men who had been born in the bottom fifth of the population (as ranked by social and economic status) had made it into the top fifth. Earl Wysong of Indiana University and two

colleagues recently decided to update the study. They compared the incomes of 2,749 father-and-son pairs from 1979 to 1998 and found that few sons had moved up the class ladder. Nearly 70% of the sons in 1998 had remained either at the same level or were doing worse than their fathers in 1979. The biggest increase in mobility had been at the top of society, with affluent sons moving upwards more often than their fathers had. They found that only 10% of the adult men born in the bottom quarter had made it to the top quarter.

The Economic Policy Institute also argues that social mobility has declined since the 1970s. In the 1990s 36% of those who started in the second-poorest 20% stayed put, compared with 28% in the 1970s and 32% in the 1980s. In the 1970s 12% of the population moved from the bottom fifth to either the fourth or the top fifth. In the 1980s and 1990s the figures shrank to below 11% for both decades. The figure for those who stayed in the top fifth increased slightly but steadily over the three decades, reinforcing the sense of diminished social mobility.

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Liz, meet the royals

Not all social scientists accept the conclusion that mobility is declining. Gary Solon, of the University of Michigan, argues that there is no evidence of any change in social-mobility rates, down or up. But, at the least, most people agree that the dramatic increase in income inequality over the past two decades has not been accompanied by an equally dramatic increase in social mobility.

Take the study carried out by Thomas Hertz, an economist at American University in Washington, DC, who studied a representative sample of 6,273 American families (both black and white) over 32 years or two generations. He found that 42% of those born into the poorest fifth ended up where they started—at the bottom. Another 24% moved up slightly to the next-to-bottom group. Only 6% made it to the top fifth. Upward mobility was particularly low for black families. On the other hand, 37% of those born into the top fifth remained there, whereas barely 7% of those born into the top 20% ended up in the bottom fifth. A person born into the top fifth is over five times as likely to end up at the top as a person born into the bottom fifth.

Jonathan Fisher and David Johnson, two economists at the Bureau of Labour Statistics, looked at inequality and social mobility using measures of both income and consumption. They found that mobility “slightly decreased” in the 1990s. In 1984-90, 56% and 54% of households changed their rankings in terms of income and consumption respectively. In 1994-99, only 52% and 49% changed their rankings.

Two economists at the Federal Reserve Bank of Boston analysed family incomes over three decades. They found that 40% of families remained stuck in the same income bracket in the 1990s, compared with 37% of families in the 1980s and 36% in the 1970s. Aaron Bernstein of *Business Week* points out that, even though the 1990s boom lifted pay rates for low-earners, it

did not help them to get better jobs.

There is also growing evidence that America is less socially mobile than many other rich countries. Mr Solon finds that the correlation between the incomes of fathers and sons is higher in the United States than in Germany, Sweden, Finland or Canada. Such cross-national comparisons are rife with problems: different studies use different methods and different definitions of social status. But Americans are clearly mistaken if they believe they live in the world's most mobile society.

Back to the 1880s

This is not the first time that America has looked as if it was about to succumb to what might be termed the British temptation. America witnessed a similar widening of the income gap in the Gilded Age. It also witnessed the formation of a British-style ruling class. The robber barons of the late 19th century sent their children to private boarding schools and made sure that they married the daughters of the old elite, preferably from across the Atlantic. Politics fell into the hands of the members of a limited circle—so much so that the Senate was known as the millionaires' club.

Yet the late 19th and early 20th centuries saw a concerted attempt to prevent America from degenerating into a class-based society. Progressive politicians improved state education. Philanthropists—many of them the robber barons reborn in new guise—tried to provide ladders to help the lads-o'-parts (Andrew Carnegie poured millions into free libraries). Such reforms were motivated partly out of a desire to do good works and partly out of a real fear of the implications of class-based society. Teddy Roosevelt advocated an inheritance tax because he thought that huge inherited fortunes would ruin the character of the republic. James Conant, the president of Harvard in 1933-53, advocated radical educational reform—particularly the transformation of his own university into a meritocracy—in order to prevent America from producing an aristocracy.

Pushy parents, driven brats

The evils that Roosevelt and Conant worried about are clearly beginning to reappear. But so far there are few signs of a reform movement. Why not?

The main reason may be a paradoxical one: because the meritocratic revolution of the first half of the 20th century has been at least half successful. Members of the American elite live in an intensely competitive universe. As children, they are ferried from piano lessons to ballet lessons to early-reading classes. As adolescents, they cram in as much after-school coaching as possible. As students, they compete to get into the best graduate schools. As young professionals, they burn the midnight oil for their employers. And, as parents, they agonise about getting their children into the best universities. It is hard for such people to imagine that America is anything but a meritocracy: their lives are a perpetual competition. Yet it is a competition among people very much like themselves—the offspring of a tiny slither of society—rather than among the full range of talents that the country has to offer.

The second reason is that America's engines of upward mobility are no longer working as effectively as they once were. The most obvious example lies in the education system. Upward mobility is increasingly determined by education. The income of people with just a high-school diploma was flat in 1975-99, whereas that of people with a bachelor's degree rose substantially, and that of people with advanced degrees rocketed.

The education system is increasingly stratified by social class, and poor children have a double disadvantage. They attend

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schools with fewer resources than those of their richer contemporaries (school finances are largely determined by local property taxes). And they have to deal with the legacy of what Michael Barone, a conservative commentator, has labelled “soft America”. Soft America is allergic to introducing accountability and measurement in education, particularly if it takes the form of merit pay for successful teachers or rewards for outstanding pupils. Dumbed-down schools are particularly harmful to poor children, who are unlikely to be able to compensate for them at home.

Roosevelt's warnings go unheeded

America's great universities are increasingly reinforcing rather than reducing these educational inequalities. Poorer students are at a huge disadvantage, both when they try to get in and, if they are successful, in their ability to make the most of what is on offer. This disadvantage is most marked in the elite colleges that hold the keys to the best jobs. Three-quarters of the students at the country's top 146 colleges come from the richest socio-economic fourth, compared with just 3% who come from the poorest fourth (the median family income at Harvard, for example, is $150,000). This means that, at an elite university, you are 25 times as likely to run into a rich student as a poor one.

One reason for this is government money. The main federal programme supporting poorer students is the Pell grant: 90% of such grants go to families with incomes below $41,000. But the federal government has been shifting resources from Pell grants to other forms of aid to higher education. Student loans are unrelated to family resources. Federal tax breaks for higher education benefit the rich. State subsidies for higher education benefit rich and poor alike. At the same time, colleges are increasingly using financial aid to attract talented students away from competitors rather than to help the poor.

Another reason may be “affirmative action”—programmes designed to help members of racial minorities. These are increasingly used by elite universities, in the belief that race is a reasonable proxy for social disadvantage, which it may not be. Flawed as it may be, however, this kind of affirmative action is much less pernicious than another practised by many universities: “legacy preferences”, a programme for the children of alumni—as if privileged children were not already doing well enough out of the education system.

In most Ivy League institutions, the eight supposedly most select universities of the north-east, “legacies” make up between 10% and 15% of every class. At Harvard they are over three times more likely to be admitted than others. The students in America's places of higher education are increasingly becoming an oligarchy tempered by racial preferences. This is sad in itself, but even sadder when you consider the extraordinary role that the same universities—particularly Conant's Harvard—played in promoting meritocracy in the first half of the 20th century.

All snakes, no ladders

America's great companies are also becoming less successful agents of upward mobility. The years from 1880 to 1960 were a period of great corporate behemoths. These produced a new class of Americans—professional managers. They built elaborate internal hierarchies, and also accepted their responsibilities to both their workers and their local communities. But since the 1970s the pressure of competition has forced these behemoths to become much leaner—to reduce their

layers, contract out some activities, and shift from full-time to part-time employees. It has became harder for people to start at the bottom and rise up the company hierarchy by dint of hard work and self-improvement. And it has also become harder for managers to keep their jobs in a single company.

There are a few shafts of sun on the horizon. George Bush's No Child Left Behind Act tries to use a mixture of tests and punishments for lousy schools to improve the performance of minority children. Senator Edward Kennedy bangs the drum against legacy preferences. But the bad news outdoes the good. The Republicans, by getting rid of inheritance tax, seem hell-bent on ignoring Teddy Roosevelt's warnings about the dangers of a hereditary aristocracy. The Democrats are more interested in preferment for minorities than building ladders of opportunity for all.

In his classic “The Promise of American Life”, Herbert Croly noted that “a democracy, not less than a monarchy or an aristocracy, must recognise political, economic, and social distinctions, but it must also withdraw its consent whenever these discriminations show any tendency to excessive endurance.” So far Americans have been fairly tolerant of economic distinctions. But that tolerance may not last for ever, if the current trend towards “excessive endurance” is not reversed.

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Endangered languages

Babel runs backwards

Dec 29th 2004
From The Economist print edition

Bridgeman

The world's languages are disappearing at the rate of one a fortnight. What to do?

“AND they said one to another, go to, let us build us a city and a tower, whose top may reach unto heaven; and let us make a name, lest we be scattered abroad upon the face of the whole Earth...And the Lord said, behold, the people is one, and they have all one language; and this they begin to do...let us go down, and there confound their language, that they may not understand one another's speech. So the Lord scattered them abroad from thence upon the face of all the Earth.” That ended the building of the tower of Babel, and started the confusion of tongues.

The usual way to read this passage from Genesis is that God punished his people for getting too uppity. Multilingualism was a curse to bring them down to Earth—an expulsion from the paradise of effortless communication.

If that is what happened, the Lord certainly made a thorough job of it. The single language that may have been spoken at the dawn of modern mankind, perhaps 60,000 years ago, gradually diversified into huge numbers. Perhaps tens, possibly hundreds of thousands of languages may have evolved and then died as the people who spoke them first flourished, then perished. The vast majority left no written trace, and so no trace at all. A few, such as Sumerian, Etruscan and Mayan, survived in writing but became extinct in daily life. Others, such as Latin, Sanskrit and ancient Greek, were preserved in written form but also evolved into live new tongues.

Languages have been coming and going for millennia, but in recent times there has been less coming and a lot more going. When the world was still populated by hunter-gatherers, small,

tightly knit groups developed their own patterns of speech independent of each other. Some linguists reckon that 10,000 years ago, when the world had just 5m-10m people, they spoke perhaps 12,000 languages between them.

Soon afterwards many of those people started settling down to become farmers, and their languages too became more settled and fewer in number. In recent centuries, colonisation, trade, industrialisation, the development of the nation-state and the spread of universal compulsory education, among other things, have helped to extirpate many languages that had previously prospered in isolation. And in the past few decades, thanks to globalisation and better communications, the rate of attrition has greatly accelerated, and dominant languages such as English, Spanish and Chinese are increasingly taking over.

At present the world has about 6,800 distinct languages (and many more dialects), according to Ethnologue, a database maintained by the Summer Institute of Linguistics in Dallas. The distribution of these languages is hugely uneven. The general rule is that temperate zones have relatively few languages, often spoken by many people, whereas hot, wet zones have lots, often spoken by small numbers. Europe has only around 200 languages; the Americas about 1,000; Africa 2,400; and Asia and the Pacific perhaps 3,200, of which Papua New Guinea alone accounts for well over 800. The median number of speakers is a mere 6,000, which means that half the world's languages are spoken by fewer people than that.

Already well over 400 of the total of 6,800 languages are close to extinction, with only a few elderly speakers left. The list makes melancholy reading. Pick, at random, Busuu in Cameroon (eight remaining speakers), Chiapaneco in Mexico (150), Lipan Apache in the United States (two or three) or Wadjigu in Australia (one, with a question-mark): none of these seems to have much chance of survival.

Worse, probably 3,000 or so others are also endangered. Linguists classify languages on a scale ranging from “safe” (learnt by all children in the group, and spoken by all its members) to “critically endangered” (only a few old speakers). On that scale, “endangered” comes in the middle, meaning that children no longer learn the language and only adults speak it.

Dying as—and because—we speak

All the experts agree that by the end of this century the number of languages in use will be much smaller than it is now, but they disagree on how much smaller. The optimists think that, with care and effort, the decline can be managed so that about half will survive. The pessimists reckon that in 100 years' time 90% of the world's languages will be gone, and that a couple of centuries from now the world may be left with only 200 tongues.

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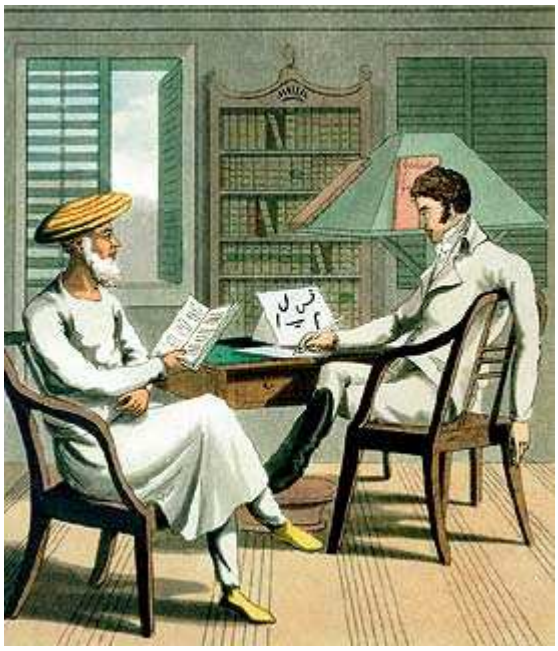


When the British were linguists

It is tempting to think that life could be simpler, better and perhaps more peaceful if everybody could settle on one, or just a few, languages, leaving less room for misunderstanding. But there is little evidence that monolingualism promotes peace. In Northern Ireland, Protestants and Catholics speak the same language. Vietnam and Somalia are both predominantly monolingual. When Yugoslavia fell into civil war, most of its people were speaking Serbo-Croat. A shared language may even make people more bellicose. According to a legend of the Acoma tribe in New Mexico, the goddess Iatiku caused languages to multiply so that people would quarrel less.

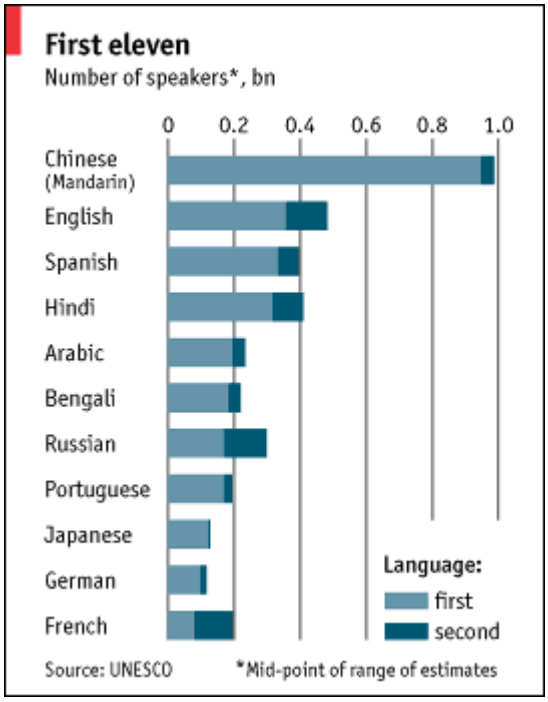
Certainly, attempts to enforce a single language tend to provoke strong reactions. James Crawford, an American writer on the subject, points to the conclusion of an 1868 federal commission on making peace with the Plains Indians: “In the difference of language today lie two-thirds of our troubles...Schools should be established which children should be required to attend; their barbarous dialects should be blotted out and the English language substituted.” The extermination happened in the end—most Native American languages are now dead or dying—but not without a struggle. For the Kurds in Turkey, and for some other minorities, efforts to suppress their language have not succeeded yet.

But minority languages disappear for many reasons. It could be because their speakers are beset by some calamity: droughts, floods, earthquakes, or imported epidemics such as swept through the indigenous populations of Latin America when the Europeans arrived. Today HIV/AIDS in some African countries is wiping out entire generations, and sometimes their language with them.

However, most languages disappear because their speakers voluntarily abandon them, says Matthias Brenzinger, of Dartmouth College, New Hampshire. Where a dominant language is associated with progress and economic success, speakers of minority languages come under pressure to learn it in order to get on. The most obvious example in the modern world is English, which is advancing by leaps and bounds—encouraged by the internet. According to Global Reach, a communications consultancy, English accounts for two-thirds of all web content.

A small number of dominant languages already rule the globe. Of the world's 6 billion-odd people, nearly a sixth speak Mandarin Chinese as a first language. If you add

the rest of the top 11—English, Hindi, Spanish, Arabic and so on—plus people who speak one of these as a second language, your list already covers well over half of mankind (see table).



As the big languages advance, the minority ones retreat. They come to be seen as backward and embarrassing. As children stop learning them and fewer people speak them, they become ever less useful. In the end, the last speakers die, taking their languages to the grave with them.

Good riddance, say some. Throughout human history, languages have been born, evolved and died; why not let nature take its course? If speakers of minority languages really wanted to hang on to them, they would make strenuous efforts to keep them alive. If they do not, it means they no longer have a use for them. Trying to save moribund languages is pointless.

Misguided cultural Darwinism, cry the linguists. Endangered languages were perfectly suited to their speakers' way of life until their habitat changed through the intervention of other humans. There is a close parallel with man's encroachment on the natural environment, but the environmentalists have made faster progress. Greenery has become mainstream, and preserving some rare butterfly, wildflower or ecosystem is considered a worthy goal. In the same way, languages should be preserved to safeguard diversity, say these linguists: a widespread loss of languages is the equivalent of an ecological disaster.

The analogy can be pushed too far. As it happens, the parts of the world with the greatest linguistic variety, such as southern Asia, Africa and Central America, are also home to the greatest variety of species. In an article in *Nature* in 2003, William Sutherland, of Britain's University of East Anglia, showed that language density increases with lower latitude and a proportionally larger area of forest and mountain. The same is true for birds. Countries with many endangered languages also have many endangered birds. But the numbers of endangered animal species increase with human density, whereas the numbers of endangered languages do not. Mr Sutherland concludes that despite the similar distribution of diversity, “the reasons for extinction risk differ between cultural and biological diversity.”

It seems, then, that the disappearance of a few, or even many, languages will not threaten the survival of the human race. But that does not mean it is unimportant. A 2003 UNESCO paper, “Language Vitality and Endangerment”, summed up the reasons why people should care:

> The extinction of each language results in the irrecoverable loss of unique cultural, historical and ecological knowledge. Each language is a unique expression of the human experience of the world...Every time a language dies, we have less evidence for understanding patterns in the structure and function of human language, human prehistory, and the maintenance of the world's diverse ecosystems. Above all, speakers of these languages may experience the loss of their language as a loss of their original ethnic and cultural identity.

The late Kenneth Hale, who taught linguistics at the Massachusetts Institute of Technology (MIT), put it more passionately: “When you lose a language, you lose a culture, intellectual wealth, a work of art. It's like dropping a bomb on a museum.”

Full of sound and significance

Such museums contain many treasures. One of the excitements for linguists is the sheer variety of human languages. They cover a large range of sounds, including clicks (heard only in Africa's Khoisan languages, and a few borrowers from them), and a wealth of different kinds of syntax, grammar and vocabulary. Each has its own intricate rules. There are wonderful oddities such as Ubykh, from the Caucasus, which has 81 consonants but only three vowels (and became extinct in 1992); and Rotokas, from Papua New Guinea with only six consonants and five vowels.

When it comes to vocabulary, the story about the Eskimos' many words for snow, to match the many varieties they encounter, is well known. It is also wrong, according to Andrew Dalby in his book “Language in Danger”. Inuit does have quite a range of different words for snow, but so, for example, does English: snow, sleet, slush and so on. The total is about the same, but the Inuit words make different distinctions from the English ones, such as “snow on the ground”, “falling snow” or “drifting snow”. However, the point of the story remains valid: each language reflects its users' particular needs and concerns.

The Haunoo in the Philippines do not need to know about snow, but as farmers they need to know about earth, and their language enables them to distinguish between ten basic and 30 derivative types of soil. Many languages reflect a detailed knowledge of the natural world: weather, animals, plants—particularly their medical uses. If such languages are lost, the knowledge embedded in them may be lost too.

Windows on the world

But languages do not just carry practical knowledge. As Daniel Nettle and Suzanne Romaine put it in “Vanishing Voices”, each language “has its own window on the world”, often incorporating subtle distinctions that resist translation. For example, the language of the Hopi Indians has many more verb forms than most European languages, which allow its speakers to differentiate much more intricately between different kinds of past, present and future. In Algonquian languages spoken in parts of Canada, such as Cree and Innu, the first person is not “I” or “we”, but “you”, reflecting their view of the importance of the individual vis-à-vis the group. In fact, anyone who speaks more than one language knows that some terms are untranslatable, which is why English-speakers borrow words and phrases such as *Schadenfreude* or *je ne sais quoi*.

The idea that different languages reflect different views of the world was developed by Edward Sapir and Benjamin Lee Whorf in the 1930s. Their hypothesis comes in two parts: first, that different languages embody different world views and, second, that this predisposes their speakers towards different ways of thought. The second part has always been controversial, but the first is hard to argue with. In the past few decades the dominant influence in linguistics has been that of Noam Chomsky at MIT, whose doctrine of universal grammar is somewhat at variance with Sapir-Whorf. It holds that all languages, despite their superficial differences, share underlying structures. But the differences are still of great interest, so, whichever theorist you believe, the loss of a language is not to be taken lightly.

Bridgeman

Learning French a century ago—one more tongue for multilingual Africans

Oddly, the world has woken up to this only fairly recently, though over the past 15 years or so a rash of books, articles and initiatives has been raising the alarm. The top priority, says David Crystal in his book, “Language Death”, is information-gathering. With so many languages at risk, the effort has to be concentrated on the most pressing cases. Perhaps two-thirds of the world's languages have never been written down, so there is an urgent need to record what may be about to vanish. Audio and video recordings can help, but the main need is for basic grammars and dictionaries, which are expensive to produce. Mr Crystal calculates that, assuming an average cost of $192,000 per language over three years, the cost of recording 3,000 endangered languages might run to $575m. But that is one guess among many.

Another big constraint is the shortage of researchers undertaking such work, says Peter Austin, of London University's School of Oriental and African Studies. His programme is helping to train more. It forms part of an endangered-languages project financed, to the tune of £20m ($39m) over ten years, by the Lisbet Rausing Charitable Fund. The Volkswagen Foundation is also paying for some documentation work, and other organisations, including UNESCO, are helping. The sums involved are mostly modest, but the fact that money is being spent at all helps to raise awareness, says Akira Yamamoto, of the University of Kansas. He argues that the best and cheapest way of documenting endangered languages is to work with the communities concerned and train their own people in research techniques.

Clearly, there is no point in trying to save a language unless the speakers wish it, but most seem to be increasingly interested. In recent decades several moribund languages, including Hawaiian, Maori and Welsh, have been successfully revived. Nicholas Ostler, of the British-based Foundation for Endangered Languages, draws a parallel with fine art: though people do not need their ancient mother tongue for physical survival, it makes life far richer.

Hebrew provides an unusual example. It was brought back from the embalmed state of being used only for religious purposes to become the official, and universally used, language of the state of Israel. But that required extraordinary circumstances and efforts—and more or less killed off another Jewish lingua franca, Yiddish.

Sharper minds, better understanding

Everybody agrees that endangered languages can be saved only if their speakers are prepared to become bi- or multilingual. That way, they can use the dominant language for work and official purposes, and their own language among family and friends. Monolingual Anglo-Saxons shudder at the thought, but linguists point out that, for most of humanity most of the time, bi- or multilingualism has been the natural state of affairs. Children can easily pick up several languages if they are exposed to them early. Indeed, there is evidence that people who speak more than one language are mentally more flexible and more creative than monoglots. Swedish children learn

English in primary school, which seems to do no harm to their Swedish (or to the rest of their education).

In his book “Spoken Here”, Mark Abley, tongue slightly in cheek, argues that the story of Babel may have been misunderstood. The Lord urged Noah and his people “to be fruitful, multiply and replenish the Earth”. They duly multiplied, but stayed put and became overcrowded. Mixing up their language was a way of getting them to spread out. It was a blessing in disguise.

The demise of any language is a loss for all mankind, but most of all a loss for its speakers. As one Navajo elder, quoted by Mr Yamamoto, told his grandson:

“If you don't breathe,
There is no air.
If you don't walk,
There is no earth.
If you don't speak,
There is no world.”

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Investing money

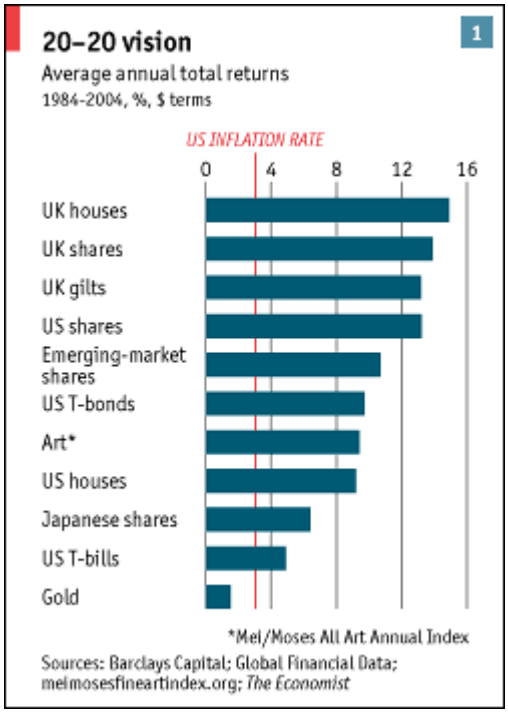
In search of a golden egg

Dec 29th 2004
From The Economist print edition

Alamy

For most of the past two decades, investors have enjoyed double-digit annual returns. The next ten years look less easy

DURING the past 20 years even a blindfolded monkey with a pin should have found it easy to make money. Annual total returns (including reinvested income) on American shares and bonds averaged 13% and 10% respectively, well ahead of inflation. Dollar investors in British equities and property did even better, scooping 14-15% (see chart 1). Today, although inflation is low and interest rates are correspondingly miserly, investors continue to hope for double-digit returns. They are likely to be disappointed: the past two decades were exceptional.



In 2004 (up to December 28th) the best performing stockmarkets in dollar terms (among those tracked by *The Economist*) were Colombia's and Egypt's, which both rose by more than 100%. America's S&P 500 index returned a more modest 11%. All too often, though, one year's star is the next year's dog. It is more informative to look at longer periods. As chart 2 shows, over the past 100 years American shares have outperformed bonds, property, art and gold, with an annual average total return of 9.7%, or 6.3% after inflation. Government bonds returned less than 5%.

This performance underlies the common view that as long-term investments shares are hard to beat. History has no doubt helped investors to live with their losses since the equity bubble burst in 2000. But a lot depends on how long the long term is. In a book in 2002, “Triumph of the Optimists”, Elroy Dimson, Paul Marsh and Mike Staunton of the London Business School found that in 13 of the 16 countries studied, shares did worse than cash in the bank in at least one 20-year period in the 20th century. Over ten-year periods, negative real returns on equities were not that uncommon. An investor buying American shares in 1964 and selling in 1974 would have made a real loss of 35%.

Another reason for caution is that periods of exceptionally high returns—such as the 1980s and 1990s—are usually followed by phases of exceptionally poor performance. The 20-year bull markets in shares (which lasted until 2000) and in bonds (which continued into 2004) were fuelled by an almost continuous fall in inflation and hence interest rates. But now that inflation is low, neither shares nor bonds are likely to deliver double-digit returns.

An environment of low and stable inflation is good for economic growth, says Martin Barnes, an economist at the Bank Credit Analyst, a Canadian investment-research firm, but it is not so great for financial markets. Interest rates have now adjusted to low inflation, and bond yields are near historic lows, so potential capital gains are limited unless deflation emerges. That implies bond returns in most countries will be broadly in line with their current yield of less than 5%.

What about equities? Despite the slump in prices in the three years to 2002, price-earnings (p/e) ratios still look a bit high, notably on American shares, and share valuations are unlikely to benefit from falling interest rates in future. Meanwhile, lower inflation means that the pace of profits growth will slow. Assume that America's nominal GDP grows by 5% a year (3% in real terms, plus 2% for inflation). If the share of profits in GDP is constant, profits will grow at the same rate. However, profits could do much less well, because in America, Japan and the euro area their share of GDP is close to a record high. They might well be expected to fall.

Suppose, though, that profits do rise in line with GDP and that p/e ratios stay the same. Then, Mr Barnes estimates, the total nominal return on American shares over the next decade will average 6.8% (5% profits growth, plus dividends), half the figure for the past 20 years. If profit margins fall modestly and the p/e ratio reverts to its long-term average, returns will average 4.9%—well below investors' expectations. Surveys suggest that individuals expect returns of more than 10%.

Could property instead lay the golden egg of the next decade? According to *The Economist*'s global house-price indices, housing has yielded double-digit returns (including rental income) in most countries over the past 20 years. But the peak may be close. In several countries house prices are at record levels relative to incomes and rents. At best, they are likely to flatten off over the coming years. Add in the sharp fall in rental yields, and the prospective total return on property over the next five years or so is poor.

The retirement of the baby-boom generation will also start to weigh on both house and share prices within a decade or so. During middle age, people tend to acquire assets, such as shares and second homes, as a future nest-egg. When they retire they sell those assets to the next generation of investors. With more sellers than buyers, that could push prices lower. And if older people care more about receiving a steady income than about maximising gains, they are likely to

prefer bonds to equities, which could dent the relative value of shares.

Average returns of 5% on equities and bonds sound meagre. That said, as long as central banks keep pumping out liquidity at their current rate, asset booms and bubbles are always likely somewhere. Commodity prices, which have surged over the past three years, could keep rising strongly, thanks to rapidly growing demand from emerging economies, such as China and India, and to supply constraints.

Investing in emerging stockmarkets could also pay off handsomely over the next decade. The average p/e ratio in emerging markets, based on future expected profits, is around ten, not much more than half of Wall Street's. To be sure, they are a risky bet: although in 18 of the past 20 years one of these markets has topped the global investment league, the same market has often collapsed the next year. Over the past 20 years, emerging markets as a group have underperformed Wall Street, with an average total return of 10.9%. But if governments can maintain their current, sounder economic policies, growth should be more stable in the years to come—and returns should be higher and less volatile.

European shares could also outperform Wall Street. The old continent's economies are widely derided for their rigid markets, high taxes and lack of entrepreneurial vim. But financial markets have discounted all this, and European shares look cheap next to American ones. Such is the gloom about Europe that there is plenty of room for pleasant surprises.

The canny investor who seeks out such opportunities is likely to fare better than a blindfolded monkey over the next decade. But the most important lesson for investors is that when nominal GDP is growing by only 5%, asset prices cannot on average be expected to rise much faster than this. Anybody wanting a bigger nest-egg will have little choice but to save more.

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The dollar

Further to fall

Dec 29th 2004
From The Economist print edition

A new year is likely to bring a new low for the dollar

THE dollar ended the year as it began: heading downhill. It hit a new low against the euro, below $1.36, on December 28th. Against the yen, it was steadier: ¥103, slightly stronger than in late November. The yen has risen by less than the euro because, although the Bank of Japan has not intervened in the foreign-exchange markets since March, the bank looks more likely to act than the European Central Bank. Japan's finance minister, Sadakazu Tanigaki, gave warning this week that his country's authorities would monitor foreign-exchange markets over the New Year holiday. In contrast, Gerrit Zalm, the Dutch finance minister, suggested that the euro's rise so far was acceptable.

Since early 2002 the dollar has lost 37% against the euro and 24% against the yen. But it has shed only 16% against the Federal Reserve's broad basket of currencies, because many Asian currencies are pegged or closely tied to the greenback.

The cause of the dollar's decline is hardly a mystery: private investors are less eager to finance America's huge current-account deficit. The deficit widened slightly in the third quarter of 2004, to a record $165 billion, or 5.6% of GDP. If the deficit remains so big, America's foreign debt burden and hence its debt-service payments will increase sharply.

So far, America's mounting foreign liabilities have not harmed its economy because the rise in its debt in recent years has been offset by lower interest rates. As a result, America still enjoys a net inflow of foreign investment income despite being the world's biggest debtor. But, as interest rates rise, refinancing America's debt will become more costly. Goldman Sachs forecasts that net foreign investment income is likely to shift to a sizeable deficit during 2005, growing thereafter. The investment bank estimates that, if America's current-account deficit remains steady as a share of GDP and interest rates average 5% in future, net foreign debt-service payments will reach 4% of GDP by 2020—a significant drag on American living standards.

By most measures the dollar is already undervalued, but experience suggests that it will need to fall further still to cut the deficit to a sustainable level, say 2-3% of GDP. Capital Economics, a London research firm, forecasts that the dollar will fall to $1.40 against the euro and to ¥90 by the end of 2005. But it expects the dollar to recover against the British pound to $1.82 from $1.93 today, as British interest rates are cut in the wake of falling house prices.

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Investment banking

Happy days

Dec 29th 2004 | NEW YORK
From The Economist print edition

Once again, it is wonderful to be a Wall Street banker

INVESTORS contemplating modest returns on shares and bonds in 2004 could be excused for assuming that Wall Street had a similarly modest year. Indeed, in the past month there have been plenty of apparent distress signals: Credit Suisse First Boston (CSFB) announced a restructuring that involved lots of layoffs and may lead to further departures. J.P. Morgan Chase quietly sacked people in New York and London. Deutsche Bank did likewise in Germany and is expected to make cuts elsewhere. Firms continue to pay fines for transgressions during the last bull market.

Save your tears. A strong fourth quarter (ending on November 30th) meant record earnings for almost all America's top investment banks. Since 2002, the share prices of Lehman Brothers, Merrill Lynch and J.P. Morgan Chase have doubled; that of Friedman Billings Ramsey, a boutique based in Washington, DC, specialising in real-estate investment trusts and initial public offerings, has quadrupled. Greenhill, a merger-advisory firm that went public in May, has seen its share price shoot up by 40%. Such amenable conditions no doubt helped soothe the internal strife blocking the initial public offering of Lazard, which was filed on December 17th.

Even more impressive than the level of Wall Street profits is the source. In 2003 gains came mainly from trading bonds. In 2004, they came from everywhere, including areas hit by the three-year slump, such as equity underwriting, equity trading and asset management, and businesses that had looked doomed, including trading in commodities and foreign exchange. Some financial firms made huge one-off gains from private-equity investments. Revenues from mergers and acquisitions were up by 50% or more, and may have further to run. December was a great month not only because many deals were consummated but also, say bankers, because more began to look likely. Chief executives have regained their self-confidence: companies are flush with cash, and are less worried that an acquisition will unearth a scandal.

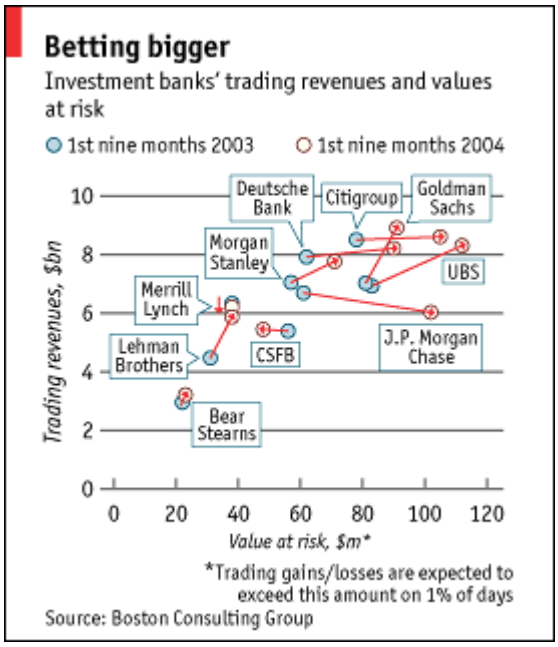
Banks are gearing up accordingly. Two years ago, Merrill Lynch cut its workforce and costs by one-third, so that it thrived even in difficult conditions. It is hiring again. Lehman Brothers, Goldman Sachs and Bank of America are reportedly scouting for additional New York office space. Pay is rising too. After a three-year gap, financial firms are once again throwing parties at exorbitantly expensive restaurants.

Although the good times are back, something did change during the slump. The big firms remained profitable, as they failed to do in the downturns of the 1970s and early 1990s. Some did much better than others. J.P. Morgan Chase has been transformed from an also-ran in mergers and acquisitions into either the second or the third in the league (behind Goldman Sachs, the perennial leader), depending on whether its own acquisition of Bank One is counted, according to Thomson Financial, a data-analysis firm. Its rival for the number-two slot is Citigroup, another climber. Citigroup is also likely to finish the year as the most active underwriter of high-yield debt, displacing CSFB, and secondary offerings of equity, pushing out Goldman Sachs. J.P. Morgan Chase's standing has also risen in these categories.

The rise of these two huge universal banks might suggest that they point the way to the future of Wall Street. However, a close look indicates that management matters more than structure. Lehman Brothers, one of the purest investment banks, has become more formidable in almost every market it contests. Since the late 1990s, it has nearly doubled in size, yet its costs remain relatively low and its management has been stable. Over the past five years, its balance sheet has improved and it has avoided common mistakes, such as bad acquisitions or mistimed expansions. While other firms have gone public or expanded access to outside capital, the proportion of Lehman's equity owned by employees has increased.

Lehman's ascent has not gone unnoticed: CSFB's restructuring has many elements in common with Lehman's approach, including the emphasis on costs and inside ownership and a focus on a fairly narrow band of core clients. Every firm has become obsessed with efficiency. Not long ago, more than 60% of CSFB's revenues went towards compensation. Lazard, in its share prospectus, pledges to keep compensation below 57% of revenue. The top firms are aiming for below 50%. One theory among bankers is that the recent spate of layoffs may be a ploy to hold down demands for bonuses.

Not every part of Wall Street is thriving. After all the legal settlements, businesses with the most obvious conflicts of interest are in trouble. Experienced equity analysts, who can no longer be paid explicitly out of investment-banking revenues because this compromises the independence of their judgments, are moving jobs or firms. Merrill Lynch's individual-client business, which always sold products from outside sources, is doing well. Morgan Stanley's, which is accused by the Massachusetts state attorney-general of using undisclosed compensation to push its high-cost in-house mutual funds, is not.



However, old legal problems may be less of a threat to future profitability than areas where all seems dandy. Increased competition in traditional operations has driven banks into riskier activities: they have made a lot of money, for instance, in proprietary trading. Their values at risk (a measure of exposure to trading losses) have mostly risen relative to trading revenues (see chart). Profits here can be volatile. Morgan Stanley and J.P. Morgan Chase were both hurt in the third quarter by poor results from their fixed-income desks.

And a by-product of increased scrutiny from prosecutors and regulators has been a shift of capital

to the corners of the financial markets where fees are highest and transparency lowest. Thus a second area to watch is profit derived from hedge funds and private-equity groups. No line item on investment banks' accounts delineates the importance of these groups. But there is no doubt that they matter.

Cost-conscious mutual funds grumble about paying a nickel a share for trades; hedge funds may happily pay four times as much for a profitable idea. They also pay banks for margin loans and clearing, and the private-client side of investment banks for bringing in customers. Private-equity firms may pay for this too, as well as fees for arranging the sale and purchase of companies. They will resist quibbling over a bill if they can get the first look at a deal.

Where this will lead is hard for an outsider to know. These customers may prove to be Wall Street's most valuable for years to come. Yet they may be, like technology companies in the 1990s, the beneficiaries of an investment fad which inflates investment banks' profits in the short term, only to cause vast harm later on. The next bust, after all, will have to start somewhere.

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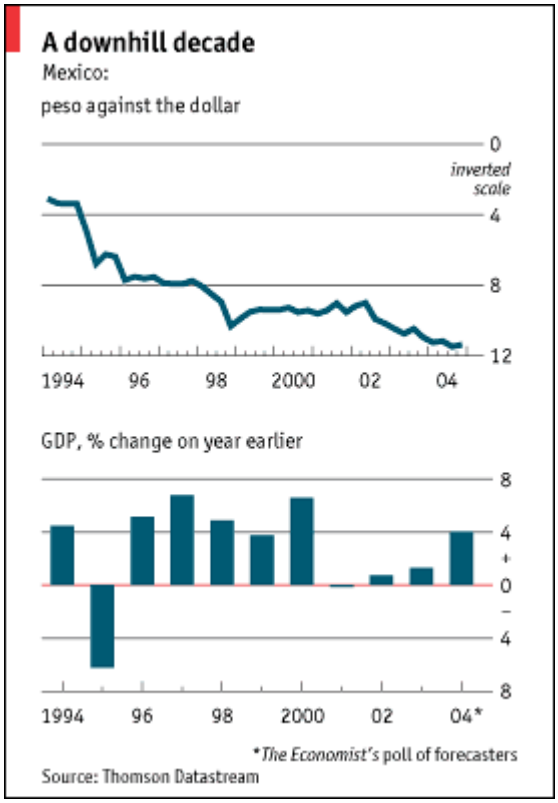
The peso crisis, ten years on

Tequila slammer

Dec 29th 2004 | MEXICO CITY
From The Economist print edition

Mexico has still not fully recovered from its worst financial crisis



TEN years ago Mexico suffered its “tequila crisis”. Its current-account deficit was a dangerous 7% of GDP and its foreign-exchange reserves dwindled: as a result, the peso's fixed exchange rate against the dollar snapped. The currency plunged by around 50% within six months. This in turn caused the local-currency value of the government's large dollar-linked debts to swell enormously and sent Mexico into a deep recession. Today the economy is firmly back on its feet, but its pace of growth remains disappointing.

The crisis was worst in the financial sector. Stacks of bad, even fraudulent, loans by the recently privatised banks were exposed. Many banks went bust. Thousands of Mexicans, particularly in the new middle class, defaulted on loans as interest rates rocketed, and had their homes repossessed. In 1995 GDP shrank by 6.2%.

But Mexico had an ace up its sleeve: the North American Free Trade Agreement (NAFTA), which

had come into effect on January 1st 1994. President Bill Clinton reasoned that Mexico, then America's third-largest trading partner, must be helped because of its importance to American jobs and investment. His administration arranged a $40-billion standby loan—in the words of Robert Rubin, then the treasury secretary, not so much “for the sake of Mexico, despite our special relationship, but to protect ourselves.”

Largely thanks to NAFTA, the Mexican economy managed to grow by 5-6% in each of the three years to 1998. But the scars remain. Real wages fell by about 20% in the wake of the crisis, and they have only just recovered their old level. The stockmarket did not regain its 1994 value in dollar terms until early 2004, although it went on to enjoy a bumper year, rising by 47%.

Mexico's economic health has undoubtedly improved in recent years. Succeeding administrations, including that of the current president, Vicente Fox, have won international plaudits for their careful stewardship of the economy. Thanks to tighter monetary and fiscal policies, inflation is around 5%, and in 2004 the current-account deficit was a modest 1.4% of GDP.

Even so, growth is hardly rapid. The economy is thought to have grown by a decent 4% in 2004, boosted by strong exports to America, high oil prices and a competitive exchange rate. (The peso is one of the few currencies to have fallen against the dollar in the past year.) However, in the ten years since the crisis Mexico's annual GDP growth has averaged a mere 2.6%—and only 1.1% in per-person terms. That is more than in another crisis-hit economy, Argentina, where GDP per person has fallen, but less than in Brazil or Chile, let alone East Asia. Despite its crisis in 1997-98, South Korea's GDP per person has grown by an average of 4.1% over the past decade.

The OECD estimates that Mexico's potential growth rate is less than 4%, too little for a country with a low income per person and annual population growth of 1.5%. The structural reforms which began before the tequila crisis have not lifted productivity growth much. Rogelio Ramírez de la O, an independent economist, argues that Mexico drew one vital “wrong lesson” from its troubles. The government of Carlos Salinas, which was largely responsible for the crisis, championed deregulation and free trade. But the peso crash, and all the corruption and cronyism exposed by it, “basically discredited all Mr Salinas's good policies as well.” This stopped the wave of economic reforms in its tracks.

The OECD reckons that Mexico's annual potential growth rate could be lifted above 6%. The country needs to improve education and infrastructure, and to increase competition in the business sector. Most urgent is the need to sharpen incentives for workers and firms to operate in the formal sector, where productivity is higher. At present relatively high social-security contributions deter the hiring of low-skilled workers with formal contracts.

Without such reforms the Mexican economy will continue to trail its competitors. Despite NAFTA, Mexico has been overtaken by China as an exporter to the United States and is likely to lose further ground to Chinese clothing producers after the elimination of global import quotas on January 1st. Since the tequila crisis, Mexico's economic policies have followed a much more sober path, but until it wakes up from its hangover on structural reform, the country will continue to disappoint.

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Parmalat

Where credit's due

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Further exchanges in the Parmalat affair

Get article background

ENRICO BONDI, special administrator of Parmalat, a family-controlled Italian dairy group that went spectacularly bust a year ago, has consistently maintained that plenty of people knew, or should have known, that a brazen fraud lay behind the firm's healthy façade. To make his point, Mr Bondi sued several of Parmalat's biggest banks, as well as two of its auditors, claiming €10 billion (then $12 billion) that he argues is owed to the group. The banks have defended themselves vigorously.

That legal conflict looks both simpler and more complicated than it did. On December 17th Giuseppe Coscioni, a judge in Parma, Parmalat's home city, ruled that some €15.5 billion of disputed credits, many of them claimed by big international banks, should be included in the official list of the firm's debts.

As a consequence the banks, previously excluded by Mr Bondi, will now take their place among other creditors who must vote to approve a proposed debt-for-equity swap that will be followed by a re-listing of Parmalat's shares. The re-admitted credits will account for some 25% of the “new” Parmalat's equity: bondholders account for most of the rest. Mr Bondi has proposed a reflotation as early as March. The banks are unlikely to contest that now.

If that looks like a victory for the banks, Mr Bondi is not about to back away from his central contention—that Parmalat's lenders connived in fraud. The day before Mr Coscioni's ruling, he sued 45 banks, 35 of them Italian, claiming more than €5 billion. Under Italian law, money or collateral received during the year before a bankruptcy must be repaid if the plaintiff can show that the recipient had reason to suspect something amiss. Mr Bondi's claim is that this undermines the banks' claims on collateral offered by Parmalat.

Prior to this latest raft of so-called “clawback” lawsuits (there are more to come), Mr Bondi had been accused of discriminating against Parmalat's international lenders. Nonsense, he said; he was merely suing the most blatant offenders first. Yet the onus will remain on him to establish in various courts that banks and auditors are liable. This is no easy task against determined opponents.

Jurisdictional quirks add to the difficulties. Parmalat has not yet launched actions for damages in Italy, for example, because, once begun, no further evidence can be submitted. So before crossing that threshold, the dairy group needs help, not least from prosecutors in Parma, in securing vital material. An irony is that, because the odds of saving Parmalat as a business are distinctly brighter, Italian officialdom might soften the hard line it adopted a year ago. How fast prosecutors move will be one important sign to watch. The banks will be watching more closely than most.

100 years of Einstein

Miraculous visions

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A century after Einstein's miracle year, most people still do not understand exactly what it was he did. Here, we attempt to elucidate

IN THE span of 18 months, Isaac Newton invented calculus, constructed a theory of optics, explained how gravity works and discovered his laws of motion. As a result, 1665 and the early months of 1666 are termed his *annus mirabilis*. It was a sustained sprint of intellectual achievement that no one thought could ever be equalled. But in a span of a few years just before 1900, it all began to unravel. One phenomenon after another was discovered which could not be explained by the laws of classical physics. The theories of Newton, and of James Clerk Maxwell who followed him in the mid-19th century by crafting a more comprehensive account of electromagnetism, were in trouble.

Then, in 1905, a young patent clerk named Albert Einstein found the way forward. In five remarkable papers, he showed that atoms are real (it was still controversial at the time), presented his special theory of relativity, and put quantum theory on its feet. It was a different achievement from Newton's year, but Einstein's *annus mirabilis* was no less remarkable. He did not, like Newton, have to invent entirely new forms of mathematics. However, he had to revise notions of space and time fundamentally. And unlike Newton, who did not publish his results for nearly 20 years, so obsessed was he with secrecy and working out the details, Einstein released his papers one after another, as a fusillade of ideas.

For Einstein, it was just a beginning—he would go on to create the general theory of relativity and to pioneer quantum mechanics. While Newton came up with one system for explaining the world, Einstein thus came up with two. Unfortunately, his discoveries—relativity and quantum theory—contradict one another. Both cannot be true everywhere, although both are remarkably accurate

in their respective domains of the very large and the very small. Einstein would spend the last years of his life attempting to reconcile the two theories, and failing. But then, no one else has succeeded in fixing the problems either, and Einstein was perhaps the one who saw them most clearly.

A noble prize

When Einstein was awarded a Nobel prize, in 1921, it was for the first of his papers of 1905, which proved the existence of photons—particles of light. Up until that paper, completed on March 17th and published in *Annalen der Physik* (as were the other 1905 papers), light had been supposed to be a wave, since this explains the interference patterns created when it passes through a grating. Einstein, however, began from a different premise, by considering the so-called “black-body experiment”.

A black body is a notional heated box that emits electromagnetic radiation (light, and its cousins such as radio and X-rays) at all frequencies. One of the main problems of physics at the turn of the century was that black-body radiation was predicted to increase indefinitely at higher frequencies, which was physically impossible. Five years earlier, Max Planck, a respected elder statesman of German physics, had supposed that a black body could emit radiation only at discrete frequencies. The gaps between these frequencies are the quantum jumps from which quantum theory ultimately derives its name. Quantising radiation in this way gets round the problem of indefinitely increasing frequencies.

Planck, however, stopped short of making the deduction that quantising light means that it is made of particles rather than waves. Einstein, by contrast, concluded just that. Furthermore, he went on to show how this assumption explained the photoelectric effect, another physical mystery of the time.

The photoelectric effect occurs when light shines on to an electrical conductor. The light knocks electrons out of their orbits and causes a current to flow. The paradox was that shining a brighter beam at the conductor did not increase the voltage, although the current increased. The light, in other words, was producing more electrons, but not more energetic electrons. Turn up the frequency of the light beam, however, and the voltage goes up. Einstein showed that this is explained if light is composed of particles (which only later came to be called photons) whose energy is proportional to their frequency.

Although physics students today are often taught that it was a quirk of the Nobel committee to give the prize to Einstein for his quantum work rather than relativity, the truth is that everyone at the time, including Einstein, believed it to be the more surprising result. When, late in 1905, he sent a friend some reprints of his papers, he said, “I am sending you some papers which may be of interest. Only one of them is revolutionary.” He was referring to the photoelectric paper, rather than anything on relativity. As he later wrote, “It was as if the ground had been pulled out from under one's feet, with no firm foundation to be seen anywhere, upon which one could have built.” Indeed, the idea that light is made of particles was not truly accepted until 1923, when it was found that electrons could hit light and cause it to gain energy, as well as the reverse.

Local knowledge

Though Einstein's quantum hypothesis eventually became accepted, it had consequences that not even he had foreseen. Up until the late 1920s, quantum theory evolved in an *ad hoc* fashion. It fell to a younger generation of physicists, in a burst in the late 1920s and early 1930s, to codify it into a universal system now known as quantum mechanics. This shows that light is actually neither just a particle nor just a wave, but rather both simultaneously. Similarly, objects traditionally thought of as particles, such as electrons, are also, simultaneously, waves.

Two consequences followed. The first was that chance plays a fundamental role in the interactions of elementary particles, and therefore in the way the world works. Physics, up to that point in history, had been “deterministic”. Consequence followed cause with no room for uncertainty. But uncertainty is at the core of quantum mechanics. It is there in the form of Werner Heisenberg's famous “uncertainty principle” that it is impossible to measure both the speed and the location of an object with precision. And it is there in the form of Erwin Schrödinger's equally famous cat, which is simultaneously dead and alive because its fate depends on the quantum properties of an object whose state is indeterminate (rather than merely unknown) until it is measured.

The second consequence is that the world is “non-local”. That is to say, quantum interactions occur instantaneously over arbitrarily long distances. What is more, there is no mechanism in quantum mechanics which explains how particles “communicate” to match up their quantum properties in this way. For example, if one particle is spinning in one direction, its partner must spin in the opposite. However, the first particle does not have a definite direction until it is measured (Schrödinger's cat again), so the second particle cannot “know” how to point until a measurement is performed on the first particle, by which time the second particle may be millions of kilometres away. Einstein termed this “spooky action-at-a-distance”.

Einstein was profoundly uncomfortable with both uncertainty and non-locality. From that time until the end of his life in 1955 (making 2005 also the 50th anniversary of his death) he worked to eliminate them from physics. But despite the fame of Einstein's statement that “God does not play dice”, he did not believe that quantum mechanics was fundamentally incorrect. Indeed, he was the first to propose Schrödinger and Heisenberg—whose reputations were not established at the time—for Nobel prizes. Rather, he believed it was incomplete.

The best analogy here is to temperature. Temperature does not really exist. When something is said to be hot or cold, what is actually being described is the average speed of the molecules of which that something is made. If the molecules are moving quickly, it is hot, and if slowly, then cold. Temperature is merely a succinct encapsulation of this average. Similarly, Einstein believed that quantum mechanics was describing some sort of statistical average of an underlying phenomenon that was deterministic.

In 1935, Einstein, along with two young collaborators, Boris Podolsky and Nathan Rosen, proposed an experiment that would test this idea by probing action-at-a-distance. It was not, however, performed until 1982. And when Alain Aspect and his colleagues at the University of Paris did carry out the measurement, they found that it was Einstein, not quantum theory, which was wrong. Action-at-a-distance, spooky though he thought it, does occur. However, this episode is an excellent illustration of Einstein's contribution to quantum mechanics. By constantly trying to poke

holes in the theory, he made it both stronger and clearer.

As clear as daylight

Abraham Pais, a physicist who wrote what is generally regarded as the definitive scientific biography of Einstein, said of his subject that there are two things at which he was “better than anyone before or after him; he knew how to invent invariance principles and how to make use of statistical fluctuations.” Invariance principles play a central role in the theory of relativity. Indeed, Einstein had wanted to call relativity the “theory of invariants”.

The idea of an invariant, which, largely because of Einstein, became central to physics in the 20th century, is something that stays constant under various transformations. A circle is invariant under rotation, because it looks the same no matter how it spins. A square, on the other hand, is invariant only under rotations of 90°. Rotate it through a right angle, or a multiple of a right angle, and it is indistinguishable from its unrotated self. Rotate it by any other angle, and it will appear different.

Einstein's insight in the special theory was that the speed of light is such an invariant. It is constant, no matter what speed the observer is travelling at. Add to this the condition, first codified by Galileo, that the laws of physics should look the same so long as the observer is in steady motion, and the special theory of relativity follows. But why did Einstein think the speed of light had to be invariant?

He was not a particularly adroit experimenter or mathematician. His power lay in thinking more clearly about the physical consequences of experimental results than any of his contemporaries, or, indeed, than anyone since.

The experiment in question here is called the Michelson-Morley experiment, after Albert Michelson and Edward Morley, who first performed it in 1887. Even though Newton had explained in the 17th century how light behaved, no one knew what it was until the 1860s, when Maxwell showed that it consists of oscillating electric and magnetic fields. This immediately raised the question of what the fields were oscillating in. At that time, no one could conceive of waves which were not vibrations in some medium. The ocean had waves in water, and sound waves travelled through air; it seemed nonsense to imagine that waves could just “be”.

For this reason, physicists postulated the existence of the aether—a substance, otherwise

undetectable, through which light travelled. But if the Earth was orbiting the sun, and so moving through space, it must be moving through the aether, too. Measure the speed of light in the direction of the Earth's motion, and perpendicular to it, and you would get different answers, the line of reasoning went. This is what Michelson and Morley did. But they found that the two speeds were, in fact, precisely the same.

The experiment was explained by Henrich Lorentz, a Dutch physicist, who came up with the mathematics required for the answer—that there was a contraction in the direction of the Earth's movement, just enough to make the two speeds *seem* the same. Lorentz could not explain how this contraction occurred, though. He speculated that perhaps forces were at work inside molecules, which were, at the time, still hypothetical entities.

What Einstein realised, without adding any new mathematics, but in a profoundly new way nonetheless, was that there was no *seem* about it. Space really was contracting, and time was slowing down. It is just this that Pais was referring to when he said that Einstein was good at picking invariance principles. Everyone had thought that time was invariant. It is not. No one thought the speed of light was. It is.

Ultimately, it was the same skill in discernment that led Einstein to the general theory of relativity. One of the consequences of the speed of light being invariant is that nothing can travel faster than it. Einstein realised this in his first relativity paper of 1905. He did not immediately see another consequence, that the invariant also implied that mass and energy are interchangeable, the rate of exchange being defined by the speed of light and governed by the one equation in physics that most people have heard of: $E=mc^2$, in which “E” represents energy, “m” mass and “c” the speed of light. This equation, whose consequences were played out in Hiroshima and Nagasaki in 1945, occurred to him a few weeks later, and he published it in another paper, which he wrote up in November 1905.

The speed restriction was a problem for Newton's theory of gravity. That is because, according to Newton, gravity travels instantaneously—which, according to Einstein, is an impossibility. This set Einstein to thinking about exactly what mass is.

In 1907, he realised that the feeling a person gets when being pulled to the Earth by gravity is identical in nature to that which he gets while accelerating—being pushed, for instance, against the seatback of an aeroplane when it is taking off. Both of these are related to that person's mass, but classical physics assumed they were different mass-related phenomena. Einstein, however, concluded that because gravity and acceleration seem the same, they are the same.

He dubbed this conjecture the principle of equivalence. However, unlike the case of special relativity, for which Lorentz had worked out the maths beforehand, in this case there was nothing around to which to apply this insight into the way that gravity works. It took Einstein a further nine years, and the help of a mathematician friend named Marcel Grossman, to work out the maths behind the general theory of relativity which, at its heart, is no more than an embodiment of this insight. By incisively and insightfully choosing what had to remain invariant in his theory (based, of course, on the real world), Einstein varied the established conception of what space and time are.

Damn truths and statistics

The second half of Pais's dictum, that Einstein was a great statistician, was shown by work that tends to get lost in the quantum and relativistic brouhaha. Among the things he did in 1905 were to prove that molecules (and thus, by extension, the atoms of which they are composed) actually exist, and to infer their size. This required the use of statistics, because of the large number of

molecules involved.

One paper, which also served as his doctoral thesis, inferred the size of molecules from the speed with which sugar dissolves in water. For many years this was his most cited study. A second paper addressed the question of Brownian motion. This is the random motion of small particles, such as dust or pollen, suspended in solution. It had been seen some years before under a microscope, but no one could explain it. Einstein, in a brief and beautifully written paper, explained how the motion was caused by molecules hitting the particles, thus proving that molecules are, indeed, real.

Einstein's use of statistics was also central to the paper about light quantisation and the photoelectric effect. Indeed, he continued applying statistics to quantum theory even before it had been fully developed by Heisenberg, Schrödinger and their contemporaries. In 1922, he received a paper from Satyendra Nath Bose, an unknown Indian physicist. Bose had worked out the statistics of how a large number of photons would behave. Because photons are identical particles which do not interfere with one another, their behaviour is different from anything anyone had seen before. Indeed, Einstein realised that Bose had made a few small mistakes. He also realised that atoms, if cooled to close to absolute zero, would exhibit the same behaviour as photons. In fact, they would act like one giant atom. This prediction was thought outlandish at the time—and it was not until 1995 that the first so-called Bose-Einstein condensate was made in a laboratory. Investigating these condensates is now one of the most active fields of experimental physics.

This is but one more example of Einstein's prescience, seeing things no one else saw at the time. As he said in 1932, “the real goal of my research has always been the simplification and unification of the system of theoretical physics.” He never succeeded in unifying physics, but he did, much as it may seem paradoxical to the layman, succeed in simplifying it. Once one learns the complex mathematical language required to express his ideas, Einstein's theories are the simplest and most obvious of any in physics.

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British colonial history

Mau Mau and the bodysnatchers

Dec 29th 2004
From The Economist print edition

Camera Press

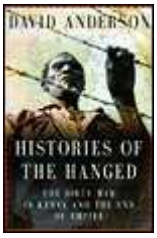
How not to run an empire

THE common image of the Mau Mau fighter is hard to erase: dirty, sullen and intransigent, with hair matted into dreadlocks from his months on the run in Kenya's equatorial forests. From the start, Mau Mau was cast as a throwback from a dark and primitive past, with its blood oaths and its disembowellings. Not since the Black Hole of Calcutta did a single phrase so instantly conjure up the forces of evil that Britain's civilising mission abroad was supposed to be doing its best to overcome. Elspeth Huxley, the white settlers' literary spokesman, wrote in 1957 that Mau Mau was the “yell from the swamp”.

In reality, as two new books begin by explaining, the roots of the Mau Mau uprising lay in a quest for the restitution of land appropriated by white settlers in Kenya in the early part of the century. During the first years black and white rubbed along without much strife. Blacks suffered badly, of course, but European farmers also struggled against drought, disease and the economic slump of the 1930s. When the Kikuyu could not sustain themselves on native reserves—poorer land that had been set aside for African use—they drifted on to white farmland in search of jobs, cultivating small subsistence plots. No fences impeded movement, and the settlers anyway needed cheap labour.

By the early 1950s, however, things had begun to change. Both in number

Histories of the Hanged: The Dirty War in Kenya and the End of Empire
By David Anderson



Norton; 320 pages; $25.95.
Weidenfeld & Nicolson; £20

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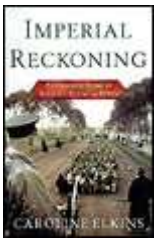
Imperial Reckoning: The Untold Story of

and determination, the white plantocracy was stronger, enriched by sustained demand for cereals since the fall of Singapore in 1942 put the agricultural wealth of South-East Asia in enemy hands. One thing it did not want was for the anti-colonialism that was spreading elsewhere in the empire to take root in Kenya.

At the same time, a new generation of Kenyan Africans—75,000 of whom had fought alongside the British against fascism—wanted a fairer future, and in particular a more equable division of land and other resources. The British were not prepared to listen, and so the usually peaceable Kikuyu turned to force, first against their colonial masters and then later—and in far greater number—against their loyalist tribal brethren.

Despite years of lip-service to what it called “the paramountcy of native interests”, the British government opposed Kikuyu militancy with force. It committed the full state apparatus—men, arms and the courts—to defending the status quo, political and economic. By the early 1950s, Britain had lost India, Palestine and, to a large extent, Malaya. It now regarded Kenya as its most important colony. The common view was that the rebellion, or “minor civil disturbance” as it was referred to in London, would take just three months to snuff out—provided that it was dealt with swiftly and firmly.

the End of Empire in Kenya
By Caroline Elkins



Henry Holt; 496 pages; $27.50. Published in Britain as "Britain's Gulag"; Jonathan Cape; £20

Buy it at
Amazon.com
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Jomo Kenyatta, Mau Mau's purported leader, was sentenced to imprisonment with hard labour by a British judge who was paid £20,000 to secure a guilty verdict. Although it was just seven years since the end of the second world war, the state of emergency that was announced with Kenyatta's arrest in October 1952 enabled Britain to circumvent all the new international conventions on labour and human rights.

Tens of thousands of Africans were arrested and detained without trial in a series of squalid camps across the country. Thousands more—1.5m indeed, or the entire Kikuyu population, according to one of these books—were barricaded inside barbed-wire villages on the reserves, in an effort to starve the rebellion of food and military supplies. A systematic campaign, including by British missionaries, attempted to win over the hearts and minds of villagers. Meanwhile, the authorities devised an elaborate ritual of oaths intended to disinfect detainees from Mau Mau contamination before their release. The system was slow, and even those who repented early on spent years being channelled through what was officially known as the “Pipeline” before being set free.

Repent, but not at leisure

Hard labour, overcrowding, bad food, contaminated water and disease were the stuff of everyday life. To ensure their repentance, detainees were commonly beaten, electrocuted, dragged behind moving vehicles, burnt with cigarettes and tortured both sexually and psychologically by British and loyalist African warders. Those who were still intractable after this regime—remarkably, an estimated 40,000 men—were sent to the camps that specialised in “dilution”. There, inmates were separated into small groups before being overpowered by wardens, stripped, shaved bald and forced to break stones.

Kenya's state of emergency was kept for four years after the fighting ended, while a sustained effort in London and Nairobi covered up the reality on the ground. Efforts were made by Fenner Brockway, a socialist campaigner, and Barbara Castle, then a fiery young Labour MP, to force the Conservative government to admit to the maltreatment and murder of detainees. But against a cold-war background, these were routinely painted as pink rumour-mongering. Calls for independent investigations were resisted.

On the eve of Britain's withdrawal from Kenya, much of the documentation was destroyed that related to how the Mau Mau were dealt with. Not a single file on the detainees survives in the police records. Little evidence remains of the work of the Kenya Regiment. Nonetheless, two young historians—one at St Antony's College, Oxford and the other at Harvard—have diligently pieced together what there is. They come to broadly the same conclusions about a dirty war which by the late 1950s had led even Enoch Powell to question whether Britain deserved an empire. The books are very different, and the interested reader would do well to read both.

David Anderson focuses on the 1,090 Kikuyu who were hanged by the authorities between 1953 and 1958, and asks why in Kenya Britain resorted so much more—and so much more swiftly—to imprisonment, flogging and capital punishment than it did in Palestine, Cyprus or Malaya. Nowhere in the history of British imperialism has state execution been used on such a scale. Mr Anderson's re-examination of the court records in order to assess whether British justice was fair or flawed does not make for happy reading.

If Mr Anderson's work is with the dead, Caroline Elkins's focus is on the living. Collecting the oral histories of some 300 detainees and their wardens, many of whom have never spoken of their experiences, enables Ms Elkins to paint a vivid portrait of daily life behind the wire.

At the time, westerners became aware of Mau Mau from reading grisly newspaper articles about the murder of white farmers. In fact, although thousands of Africans died in the conflict, only 32 white settlers were killed by Mau Mau in eight years. By shifting the focus away from the white murders that filled the press at the time, and by choosing to refer to even the most sadistic British camp wardens by the nicknames that the Kikuyu themselves used, Ms Elkins forces the reader to view this conflict from the Africans' side in a way that few western historians writing about Kenya have done before.

Small infelicities exist in both books. Mr Anderson writes of a Mwangi Toto, a minor rebel leader. His name was Mwangi Tutu, and far from being killed in a raid in October 1954, he worked for this reviewer's father until 1965 and was still alive in the 1970s in Uganda. Ms Elkins refers to a particularly vicious white settler named Dr Bunny as the “Dr Mengele of Africa”. Many people will assume she is letting the finger of suspicion fall on Dr Reginald Bunny, once well known in Kenya. Yet Bunny, a mild-mannered Quaker who ran a rural medical practice in Naivasha in the 1960s, makes an improbable torturer. Ms Elkins's willingness to use flimsy evidence to make the case for settler wrongdoing may have led her, in this instance, to suspend her usual rigorous judgment.

These are small matters, and the contribution that these two books make far outweighs them. By calling for reconciliation in the early years of his presidency, Kenyatta understandably sacrificed the past for the future. But today young Kenyans know next to nothing about the Mau Mau uprising and how it led to independence. For them, these books are an incomparable record of what happened in, and to, their country. For others, parallels with American foreign policy today are apparent enough. The lack of real accountability, the rough justice, ignoring international conventions, maltreating prisoners, detention without trial; in Kenya the British used them all.

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By David Anderson.
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AIDS and artists

Holding up a mirror

Dec 29th 2004 | JOHANNESBURG
From The Economist print edition

Writers, painters and film-makers struggle to respond

WHERE is the great African AIDS novel, film or painting? Of the 40m infected worldwide by the disease, most are in Africa, where it is the cause of deep social change. In South Africa alone, over 5m people are HIV positive, and much township life now centres on weekly funerals of young victims. Hundreds of thousands are orphaned by AIDS. Life expectancy has plummeted. Yet most South African writers and artists sit eerily quiet.

Perhaps the subject is too gloomy to inspire. Some artists respond charitably instead. Nadine Gordimer, a Nobel prizewinner for literature, has edited a fine volume of 21 short stories by Günter Grass, José Saramago and other glitterati. All royalties of "Telling Tales" (published by Picador in America and Bloomsbury in Britain) will go to an AIDS group, the Treatment Action Campaign. Yet not a word of the contents is related to the epidemic. Why? "It is", says Ms Gordimer, "a very unhappy subject, and I want this book to sell. Beside, one can't prescribe to artists what their topics should be."

Her response is not unusual. Nelson Mandela leads an anti-AIDS campaign for young people called "46664", which recruits pop stars to raise funds for AIDS. Over the past three years Sotheby's has auctioned works of South Africa's best known painters to raise money for AIDS orphans. Others have donated book royalties to orphan groups.

Few actually put the disease at the centre of their creative efforts. The national gallery in Cape Town did host a small exhibition of AIDS-related work in 2004. Notably, a group photograph by David Goldblatt showed a serene and healthy-looking mother holding her two small children in a comfortable Johannesburg home. The title notes the dates, shortly after, when the virus killed each of them.

"We don't like to dwell on that, on coffins. People are so sensitive about AIDS; it's killing the nation," says Sam Nhlengethwa, a painter who contributed to the Cape Town exhibition. AIDS affects his life, with weekend burials of friends and growing anxiety over the safety of his children. Yet he is rarely moved to respond to AIDS with the brush. Kyle Kauffman, the exhibition's curator, says that the subject does not sell; few artists are engaged personally; and many are tired of social activism after confronting apartheid.

Those who do find ways to tackle the epidemic, however, can produce compelling work. Young

stand-up poets and rappers in front of raucous township crowds are the most frank about AIDS. Kgafela oa Magogodi's collection of poems, “Thy Condom Come”, is a good example. His “Varara” (a slang name for AIDS) is typically fast and fluid: “some say/ it is satan's hand/ fiddling deliciously with earth's thighs. some/ say jesus will save them from varara./ some have more faith in femidom. some say/ horizons are so viagra varara will not stop til thy condom come”. He produces laughter, but also gets audiences talking about the disease.

Other accessible artists also tackle AIDS, including an Afrikaner transvestite, Pieter-Dirk Uys, queen of the stand-up comedy circuit who also tours township schools. Cartoonists are powerful critics of President Thabo Mbeki's shocking hostility towards public discussion of AIDS. And some gifted young novelists write of the fear of the disease among young men and women of Johannesburg. Chief among these writers was Phaswane Mpe, who died in mid-December, probably of AIDS, soon after his wife.

Perhaps the most successful is a film director, Anant Singh, who has just released the first mainstream, locally-made, feature film on AIDS. “Yesterday” is beautifully shot in rural South Africa, and tells an unsentimental story of a woman with the modern plague. The film will be shown at mobile cinemas and community centres in rural South Africa. It is also South Africa's submission to the 2005 Oscars, but Mr Singh hopes for a greater prize. “We beat apartheid, and we'll beat HIV and AIDS. Hopefully the movie is a little contribution to that end.”

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Modern life in art

Crowd-pleasing

Dec 29th 2004
From The Economist print edition

A wonderfully provocative show in London's East End

National Gallery of Art

Life as spectacle

A NEW exhibition at London's Whitechapel Gallery takes the path less travelled through modern art. “Faces in the Crowd: Picturing Modern Life from Manet to Today”, which runs until March 6th, does not focus on grand narratives—movements such as Cubism, Abstract Expressionism or Conceptualism. Rather, it presents figurative art portraying the human experience of modern life, from the late 19th century onwards.

The exhibition's title comes from an Ezra Pound poem inspired by a journey on the Paris Metro: “The apparition of these faces in the crowd; petals on a wet, black bough”. The Chinese-inspired image may strike the modern commuter as implausible. Still, the two curators, Iwona Blazwick and Carolyn Christov-Bakargiev, of the Whitechapel and the Castello di Rivoli in Turin respectively, whisk the viewer through how artists have depicted the individual in the metropolis.

The exhibition opens with Edouard Manet's “Masked Ball at the Opera” (1873), which brilliantly captures life in the modern city. Its snapshot cropping conveys a sense of spontaneity and reportage. People mingle with those with masks, blurring distinctions of status and conferring anonymity. The artist looks out of the picture at you, and you look in at him, made suddenly aware of his identity by the signed programme lying at his feet.

Manet reflected new subjects and new spaces for art, as well as ideas about art mirroring the

faster pace of life. He also understood that life was becoming more of a spectacle. Brassai's photos of night-time Paris, newly electrified, present an urban drama where citizens are on show. Rodchenko's posters create utopian visions out of mass movements. Song Dong's more recent slide show of modern Shanghai projected through a crumpled paper shows the constantly shifting fabric of urban life. Raghubir Singh's photos of teeming Indian cities look like collages.

Indeed, a happy accident of the show is that it provides a small masterclass in 20th-century photography. Rene Burri's linear visions of skyscrapers are there, along with Robert Capa at war, Walker Evans riding New York's subway and Helen Levitt on its streets. David Goldblatt's deadpan images of apartheid South Africa hang near the wacky photos of priests playing in the snow by Mario Giacomelli, an Italian neo-realist. As the exhibition (and the century) progresses, the viewer sees how photography moved from a document to an artistic medium in its own right—starting with Andy Warhol's silk screen of a mourning Jackie Kennedy and moving through Gilbert and George, Cindy Sherman and the nostalgic images of political protest by Sam Durant.

This show is a rare opportunity to see a wide range of extraordinary art, much of it on loan from abroad. It is impressive because of imperfections, not despite them. Viewers may question the selection or poke holes in the cerebral arguments of the catalogue. But the show is so packed with provocative work that arguing over it is part of the fun. It is a reminder of how frenetic and infuriating and endlessly fascinating life in a modern city can be. If life can imitate art even for the span of an exhibition, that is no bad thing.

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Obituary

Lord Scarman

Dec 29th 2004
From The Economist print edition

Camera Press

Leslie George Scarman, lawyer and judge, died on December 8th, aged 93

BACK in the 1980s, the Brixton area of south London was one of the more dangerous in the capital. Away from the bustling Brixton Road and the lively Caribbean market it was poor, squalid and riddled with drugs. Since the 1950s, Jamaican immigrants had settled there in crumbling Victorian terraces and vast council estates; 30 years on, their jobless sons were on the streets. The English HQ of reggae and Rastafarianism was not a comfortable place for middle-class white folk to wander in.

Still less, one might think, a white middle-class judge, whose cadaverous face and stooping shoulders suggested, correctly, a life spent mostly with volumes of the classics and English statute law. But in 1981 Lord Scarman, the man charged to investigate the Brixton riots of that spring, was often to be seen there. He went without a retinue, dropping into schools and community halls to talk to ordinary people and find out what had happened.

The riots had raged for two days and nights in April, with more than 300 people injured and 28 buildings set ablaze. Unrest had spread to Bristol, Leeds and Merseyside. Yet the core remained Brixton, where the police had been carrying out an operation to stop and search as many young black men as possible. In this climate, a minor confrontation over a stabbing soon escalated into the worst outbreak of disorder in Britain in the 20th century.

Lord Scarman's report mostly stated the obvious: that the area was horribly deprived, with

unemployment rates among young black men of close to 50%, that policing was often “immature and racially prejudiced”, and that, in such conditions, the riots were a simple response to perceived harassment by white officers. Stating the obvious, however, and in a fair-minded manner, was exactly what was needed. Britain was not, as many feared, heading down the American road towards ungovernable ghettos. But something was deeply amiss, and needed fixing.

The report's recommendations were ground-breaking, even shocking to some in Margaret Thatcher's government. Lord Scarman called for more minority policemen; new community liaison groups, to which the police should explain themselves; policies to reduce black unemployment; and new police rules to make racial discrimination a disciplinary offence.

These came to pass somewhat slowly. Black unemployment in Britain remains much higher than white, and blacks are still four or five times more likely than whites to be stopped and searched. In 1999 an inquiry into the murder of a young black man, Stephen Lawrence, concluded that racism in the Metropolitan Police was “institutionalised” and not, as Lord Scarman had said, just a matter of a few “bad apples”. But it was largely thanks to Lord Scarman that the Met, and other big-city forces, acquired a habit of public soul-searching about it.

Weeding out the statute book

Leslie Scarman had not anticipated that he would become an expert on Rastafarianism. His impressive career—scholarships to Radley and Brasenose College, Oxford, the Bar in 1936, silk (Queen's Counsel) in 1957, High Court judge in 1961—had led him by 1965 to become the first chairman of the Law Commission, which was set up by the Labour government to rationalise and codify the statutory laws of England. This painstaking, largely unsung work of snipping out defunct bits of legislation, and improving the rest, was probably his greatest achievement. The laws of 1969 and 1970 that streamlined divorce and codified women's property rights in marriage were almost all his doing.

Conservatives did not trust him. Yet Lord Scarman was a tricky man to pigeonhole politically. In the inquiry he chaired into the Northern Ireland unrest of 1969, as in the Brixton inquiry, he came out solidly on the side of the oppressed and disenfranchised minority. In retirement, he campaigned for the Guildford Four and the Birmingham Six, suspects unfairly charged (as it later emerged) with IRA bombings in mainland Britain. From the 1970s, he wanted a written bill of rights for Britain and a Freedom of Information Act.

Yet his respect for precedent and the authority of the state could often trump his liberal instincts. He agreed that the Thatcher government, on grounds of national security, could restrict trade-union rights at the GCHQ secret-service facility in Cheltenham. And he upheld the ruling under the Blasphemy Act—one of the more arcane relics in the British legal system—that *Gay News* had offended by claiming that Christ was homosexual.

He did not believe, in short, that judges should extend judicial precedents in order to change society. That the law could be a force for good, he was certain; but he wanted Parliament to amend it, not judges to decide it. However strongly a judge felt, his opinions should not intrude.

In fact, few knew what his own deep opinions or interests were. He would not be drawn on his religious instincts, though he admitted he had them. He loved opera, and loathed public dinners. He was intensely private, yet made himself accessible to poor blacks to whom no one else would listen. It is not certain that he would have liked the music at the Afro-Caribbean Club in Brixton; but in 1984 he was invited, wholeheartedly, to become a member.

Overview

Dec 29th 2004
From The Economist print edition

America's 12-month rate of consumer-price inflation rose to 3.5% in the year to November, up from 3.2% in October and almost twice its rate a year ago. The Conference Board's index of American consumer confidence increased sharply from 92.6 in November to 102.3 in December, its highest level since July. This largely reflected improved confidence about future job prospects.

In **Japan** consumer prices rose by 0.8% in the year to November, the second month of positive inflation. But the core rate of inflation, which excludes fresh foods and which the Bank of Japan pays more attention to, was minus 0.2% over the same period. After two months of decline, Japanese industrial production rose by 1.5% in November, lifting output to 4.3% above its level a year earlier. In the same month, Japan's unemployment rate fell to 4.5%, its lowest for nearly six years. Better still, the ratio of job vacancies to job applicants rose to its highest level for 12 years.

German consumer-price inflation rose to 2.0% in December, up from 1.1% a year ago.

GDP growth in **Sweden** slowed slightly to 3.9% in the year to the third quarter. But retail sales surged by 7.9% in the 12 months to November. In the same month its jobless rate remained unchanged at 4.9%.

The **euro** hit a new life-time high of more than $1.36 on December 28th, almost 60% higher than its level in early 2002.

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Output, demand and jobs

Dec 29th 2004
From The Economist print edition

% change on year ago

	GDP		The Economist poll GDP forecasts		Industrial production		Retail sales (volume)		Unemployment % rate	
	latest	qtr*	2004	2005	latest		latest		latest	year ago
Australia	+ 3.0 Q3	+ 1.2	+ 3.6	+ 3.1	+ 4.6 Q2		+ 5.7 Q3		5.2 Nov	5.7
Austria	+ 2.7 Q3	+ 3.2	+ 1.7	+ 2.1	+ 7.4 Oct		+ 2.2 Sep		4.5 Oct	4.6
Belgium	+ 2.9 Q3	+ 3.2	+ 2.5	+ 2.1	+ 3.2 Oct		+ 2.7 Sep		12.8 Nov†	12.5
Britain	+ 3.1 Q3	+ 1.8	+ 3.2	+ 2.4	– 1.9 Oct		+ 6.1 Nov		4.7 Oct††	5.0
Canada	+ 3.3 Q3	+ 3.2	+ 2.9	+ 3.1	+ 3.6 Oct		+ 5.0 Oct		7.3 Nov	7.5
Denmark	+ 1.9 Q3	+ 0.2	+ 2.2	+ 2.2	– 3.3 Oct		+ 6.5 Oct		6.3 Oct	6.0
France	+ 2.0 Q3	+ 0.3	+ 2.2	+ 1.9	+ 1.4 Oct		+ 2.3 Oct		9.9 Oct	9.9
Germany	+ 1.3 Q3	+ 0.4	+ 1.4	+ 1.4	+ 1.9 Oct		– 2.6 Oct		10.8 Nov§	10.5
Italy	+ 1.3 Q3	+ 1.7	+ 1.2	+ 1.5	– 0.5 Oct		– 3.6 Sep		8.1 Apr	8.7
Japan	+ 2.6 Q3	+ 0.2	+ 3.9	+ 1.9	+ 4.3 Nov		– 2.2 Oct		4.5 Nov	5.1
Netherlands	+ 1.5 Q3	+ 1.3	+ 1.2	+ 1.3	+ 0.3 Oct		– 0.7 Sep‡		6.4 Nov**	5.6
Spain	+ 2.6 Q3	+ 2.4	+ 2.6	+ 2.5	– 7.0 Oct		+ 0.2 Oct		10.5 Oct	11.2
Sweden	+ 3.9 Q3	+ 3.8	+ 3.4	+ 2.8	+ 5.0 Oct		+ 7.9 Nov		4.9 Nov†	5.4
Switzerland	+ 1.8 Q3	+ 1.4	+ 1.8	+ 1.8	+ 3.5 Q3		– 1.0 Oct		3.9 Nov†	4.0
United States	+ 4.0 Q3	+ 4.0	+ 4.4	+ 3.5	+ 3.8 Nov		+ 4.3 Nov		5.4 Nov	5.9
Euro area	+ 1.8 Q3	+ 1.2	+ 1.8	+ 1.7	+ 1.0 Oct		– 0.2 Oct		8.9 Oct	8.9
MORE COUNTRIES	Data for the countries below are not provided in printed editions of *The Economist*									
Finland	+ 3.2 Q3	+ 4.3	na	na	+ 7.0 Oct		+ 2.8 Oct		8.1 Nov†	8.2
Greece	+ 3.8 Q3	+ 1.8	na	na	– 3.1 Oct		+ 4.2 Sep		na	na
Iceland	+ 7.4 Q3	na	na	na	na		na		2.7 Oct†	2.8
Ireland	+ 5.8 Q3	na	na	na	– 5.8 Oct		+ 1.2 Oct		4.3 Nov	4.5
Luxembourg	+ 2.12003	na	na	na	+ 5.2 Sep		+ 2.8 Sep		4.3 Oct	4.0
New Zealand	+ 4.0 Q3	+ 1.9	na	na	+ 5.5 Q2		+ 7.4 Q3		3.8 Q3	4.4
Norway	+ 1.6 Q3	– 3.9	na	na	+ 1.2 Oct		+ 2.4 Oct		3.5 Nov‡	3.7
Portugal	+ 0.8 Q3	– 4.9	na	na	– 7.8 Oct		+ 4.4 Oct		6.8 Q3†	6.1

*% change on previous quarter at an annual rate. †Not seasonally adjusted. ‡New series. ††Aug-Oct; claimant count rate 2.7% in Nov. §EU harmonised rate 9.9% in Oct. **Sep-Nov.

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Prices and wages

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% change on year ago

	Consumer prices latest		Consumer prices year ago	The Economist poll consumer prices forecast 2004	The Economist poll consumer prices forecast 2005	Producer prices latest		Producer prices year ago	Wages/earnings latest		Wages/earnings year ago
Australia	+ 2.3	Q3	+ 2.6	+ 2.4	+ 2.5	+ 6.1	Q3	– 0.1	+ 3.7	Q3	+ 5.1
Austria	+ 2.6	Nov	+ 1.3	+ 1.9	+ 1.7	+ 5.6	Nov	+ 2.7	+ 2.0	Nov	+ 2.3
Belgium	+ 2.3	Dec	+ 1.7	+ 2.0	+ 1.7	+ 5.6	Nov	– 0.3	+ 2.4	Oct	+ 1.8
Britain	+ 1.5	Nov*	+ 1.3	+ 1.5	+ 1.7	+ 3.5	Nov	+ 1.7	+ 4.1	Oct†	+ 3.6
Canada	+ 2.4	Nov	+ 1.6	+ 1.9	+ 2.1	+ 5.4	Oct	– 4.0	+ 2.6	Sep	+ 3.0
Denmark	+ 1.3	Nov	+ 1.5	+ 1.2	+ 1.7	+ 3.2	Nov	+ 0.6	+ 2.9	Q3	+ 3.7
France	+ 2.0	Nov	+ 2.3	+ 2.2	+ 1.6	+ 3.1	Nov	+ 0.8	+ 2.7	Q3	+ 2.9
Germany	+ 2.0	Dec	+ 1.1	+ 1.8	+ 1.4	+ 4.1	Nov	+ 1.3	+ 0.9	Sep	+ 2.6
Italy	+ 2.0	Nov	+ 2.5	+ 2.3	+ 2.0	+ 4.4	Oct	+ 0.7	+ 2.7	Oct	+ 2.6
Japan	+ 0.8	Nov	– 0.5	– 0.1	nil	+ 2.0	Nov	– 0.5	+ 1.4	Nov	+ 0.1
Netherlands	+ 1.3	Nov	+ 2.0	+ 1.4	+ 1.2	+ 6.9	Oct	– 0.2	+ 1.0	Nov	+ 2.4
Spain	+ 3.5	Nov	+ 2.8	+ 3.0	+ 2.8	+ 5.2	Nov	+ 1.3	+ 2.2	Q3	+ 3.1
Sweden	+ 0.5	Nov	+ 1.4	+ 0.7	+ 1.6	+ 2.9	Nov	– 1.6	+ 3.0	Sep	+ 2.5
Switzerland	+ 1.5	Nov	+ 0.5	+ 0.8	+ 1.2	+ 1.9	Nov	– 0.2	+ 1.4	2003	+ 1.8
United States	+ 3.5	Nov	+ 1.8	+ 2.7	+ 2.3	+ 5.1	Nov	+ 3.4	+ 2.4	Nov	+ 2.2
Euro area	+ 2.2	Nov	+ 2.2	+ 2.1	+ 1.8	+ 4.0	Oct	+ 0.8	+ 2.0	Q3	+ 2.8
MORE COUNTRIES	Data for the countries below are not provided in printed editions of *The Economist*										
Finland	+ 0.5	Nov	+ 0.5	na	na	+ 1.8	Nov	– 0.2	+ 3.1	Q3	+ 4.3
Greece	+ 3.1	Nov	+ 3.3	na	na	+ 2.9	Oct	+ 1.8	na		na
Iceland	+ 3.9	Dec	+ 2.7	na	na	+ 5.9	Dec	+ 3.5	+ 5.4	Nov	+ 5.5
Ireland	+ 2.9	Nov	+ 2.2	na	na	– 1.6	Nov	– 8.4	+ 4.5	Q3	+ 4.6
Luxembourg	+ 2.4	Nov	+ 1.8	na	na	+14.6	Oct	+ 1.0	– 0.1	Sep	nil
New Zealand	+ 2.5	Q3	+ 1.5	na	na	+ 2.5	Q3	+ 0.1	+ 2.2	Q3	+ 2.3
Norway	+ 1.2	Nov	+ 1.4	na	na	+13.3	Nov	+ 7.4	+ 4.6	Q3	+ 4.2
Portugal	+ 2.5	Nov	+ 2.5	na	na	+ 5.1	Nov	– 0.3	+ 1.4	Sep	– 1.8

*New series. RPI inflation rate 3.4% in Nov. †Aug-Oct.

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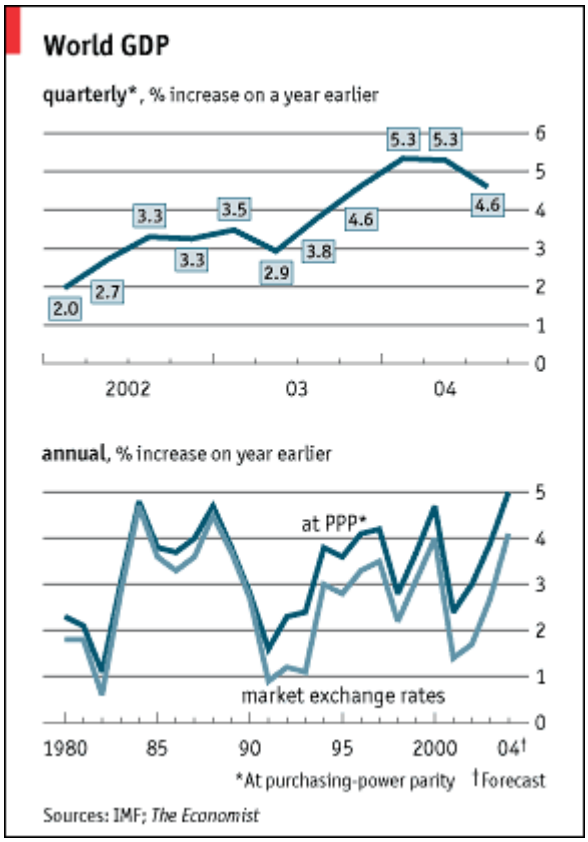
World GDP

Dec 29th 2004
From The Economist print edition

How fast is the world economy growing? From this week *The Economist* will track global GDP growth each quarter. We will estimate global growth based on 52 of the economies that we track each week in the paper or on this website. These countries account for about 90% of world GDP. Each new quarter's global growth rate will be published as soon as figures for about 80% of world GDP are available, and then be updated as more countries publish their data.



Each country's GDP growth is weighted by its share in world GDP, valued not at market exchange rates, but at purchasing-power parity (PPP), which takes account of differences in price levels between countries. This is the method used by the IMF in its *World Economic Outlook*. It avoids the distortions caused by the volatility of market exchange rates. The prices of non-traded goods tend to be much cheaper in poorer countries, so exchange rates also misleadingly reduce the weight of their economies in global GDP.

At market exchange rates the rich developed economies account for 77% of global output, but using PPP, they account for only just over half. As a result, the weights used make a big difference to global growth rates. Over the past 25 years, global GDP growth using PPP has averaged 3.3%,

but only 2.7% at market exchange rates, which give a much smaller weight to fast-growing economies such as China. And the gap is widening: in 2004, the IMF estimates that global GDP growth at PPP was 5.0%—its fastest for almost 30 years; but at market exchange rates, estimated growth was only 4.1%.

The Economist's first estimate of global GDP in the third quarter of 2004 finds that growth has slowed to 4.6% on a year ago, down from 5.3% in the second quarter.

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Money and interest rates

Dec 29th 2004
From The Economist print edition

	Money supply* % change on year ago			Interest rates % a year (Dec 28th 2004)					
				3-mth money market		2-year	10-year gov't bonds		corporate
	narrow	broad		latest	year ago	gov't bonds	latest	year ago	bonds
Australia	+ 5.0	+ 9.5	Oct	5.42	5.51	4.95	5.26	5.68	6.04
Britain	+ 5.2	+ 8.5	Nov	4.84	4.00	4.37	4.44	4.74	5.25
Canada	+12.1	+ 9.9	Nov	2.45	2.60	2.98	4.40	4.63	5.70
Denmark	+12.0	+12.5	Nov	2.25	2.30	2.47	3.72	4.36	5.05
Japan	+ 3.9	+ 2.1	Nov	0.02	0.02	0.10	1.41	1.29	1.44
Sweden	+ 1.4	+ 3.1	Oct	1.98	2.62	2.25	3.76	4.66	2.29
Switzerland	– 5.4	+ 1.4	Nov	0.74	0.25	0.88	2.18	2.59	2.35
United States	+ 6.2	+ 5.4	Nov	2.35	1.06	3.06	4.29	4.19	5.65
Euro area†	+ 9.0	+ 5.8	Oct	2.18	2.14	2.39	3.56	4.26	3.50

*Narrow: M1 except Britain and Sweden M0, broad: M2 or M3 except Britain M4. †Germany for bonds. Benchmarks: US 30-year 4.92%, Japan No. 265 1.43%. Central bank rates: US fed funds 2.25%, ECB refinancing 2.00%, BOJ overnight call 0.001%, BOE repo 4.75%. Sources: Commerzbank, Danske Bank, J.P. Morgan Chase, Royal Bank of Canada, Stockholmsbörsen, UBS, Global Insight, Westpac, Thomson Datastream. Rates cannot be construed as banks' offers.

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The Economist commodity price index

Dec 29th 2004
From The Economist print edition

1995=100

	Dec 14th	Dec 21st*	Dec 27th*	% change on one month	% change on one year
Dollar index					
All items	87.6	89.5	90.6	+ 1.6	+ 1.8
Food	80.6	82.6	83.3	+ 2.4	– 2.9
Industrials					
All	97.0	98.7	100.5	+ 0.8	+ 7.7
Nfa†	81.7	80.0	82.9	+ 0.9	– 8.8
Metals	110.0	114.6	115.5	+ 0.7	+21.1
Sterling index					
All items	71.8	73.3	73.9	+ 0.5	– 6.3
Euro index					
All items	86.7	88.1	87.5	– 0.8	– 6.4
Yen index					
All items	98.3	99.5	99.5	+ 2.0	– 1.8
Gold					
$ per oz	436.90	441.20	443.38	– 1.2	+ 6.5
West Texas Intermediate					
$ per barrel	41.82	45.51	44.16	–10.0	+34.1

* Provisional. † Non-food agriculturals.

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Stockmarkets

Dec 29th 2004
From The Economist print edition

Market indices

	Dec 28th	2004 high	2004 low	% change on one week	% change on record high	% change on Dec 31st 2003 in local currency	% change on Dec 31st 2003 in $ terms
Australia (All Ordinaries)	4,049.3§	4,049.3	3,274.9	+ 0.8	nil	+22.5	+25.3
Austria (ATX)	2,429.6	2,429.6	1,568.9	+ 0.7	nil	+57.2	+68.7
Belgium (Bel 20)	2,938.3	2,950.1	2,244.2	+ 0.2	-20.2	+30.9	+40.5
Britain (FTSE 100)	4,798.1§	4,805.3	4,287.0	+ 1.4	-30.8	+ 7.2	+15.3
Canada (Toronto Composite)	9,287.4§	9,287.4	8,123.5	+ 0.5	-18.5	+13.0	+18.8
Denmark (KBX)	256.5	257.2	219.0	+ 1.0	-15.0	+20.1	+29.0
France (SBF 250)	2,632.2	2,632.2	2,386.1	+ 1.3	-40.1	+ 9.1	+17.1
(CAC 40)	3,824.8	3,844.1	3,465.3	+ 1.5	-44.7	+ 7.5	+15.4
Germany (DAX)	4,261.8	4,261.8	3,647.0	+ 1.1	-47.2	+ 7.5	+15.3
Italy (BCI)	1,472.3	1,472.3	1,239.5	+ 1.0	-32.5	+17.2	+25.7
Japan (Nikkei 225)	11,424.1	12,163.9	10,365.4	+ 2.7	-70.6	+ 7.0	+10.7
(Topix)	1,140.2	1,217.9	1,022.6	+ 2.1	-60.5	+ 9.2	+13.0
Netherlands (AEX)	348.4	364.8	310.7	+ 1.3	-50.3	+ 3.2	+10.7
Spain (Madrid SE)	957.9	957.9	804.4	+ 1.3	-16.4	+18.6	+27.2
Sweden (Affarsvarlden Gen)	220.7	222.6	188.5	+ 0.6	-44.9	+17.2	+26.7
Switzerland (Swiss Market)	5,686.5	5,934.4	5,309.7	+ 0.8	-32.4	+ 3.6	+12.2
United States (DJIA)	10,854.5	10,854.5	9,750.0	+ 0.9	- 7.4	+ 3.8	+ 3.8
(S&P 500)	1,213.5	1,213.5	1,063.2	+ 0.7	-20.6	+ 9.1	+ 9.1
(NASDAQ Comp)	2,177.2	2,177.2	1,752.5	+ 1.2	-56.9	+ 8.7	+ 8.7
Europe (FTSE Eurotop 300)*	1,042.2	1,042.2	940.9	+ 0.6	-38.9	+ 8.8	+16.8
Euro area (FTSE Ebloc 100)*	901.7	901.7	787.2	+ 1.3	-41.8	+ 8.4	+16.4
World (MSCI)†	1,167.7	1,167.7	997.0	+ 1.5	-19.4	+12.7	+12.7
World bond market (Citigroup)‡	665.8	666.7	575.1	+ 1.1	- 0.1	+10.3	+10.3

*In euro terms. †Morgan Stanley Capital International index includes individual markets listed above plus eight others, in $ terms.
‡Citigroup World Government Bond Index, total return, in $ terms. §Dec 24th

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Trade, exchange rates and budgets

Dec 29th 2004
From The Economist print edition

	Trade balance*, $bn latest 12 months		Current-account balance $bn latest 12 mths		The Economist poll % of GDP, forecast 2004	2005	Exchange rate trade-weighted† 1990=100 Dec 28th	year ago	Currency units per $ Dec 28th	year ago	per £	per euro	per ¥100	Budget balance % of GDP 2004‡
Australia	− 16.6	Oct	− 36.2	Q3	− 5.9	− 5.4	86.2	86.9	1.30	1.35	2.50	1.76	1.25	+ 0.7
Austria	− 0.1	Sep	− 1.1	Sep	− 0.5	− 0.6	103.3§	102.8	0.74	0.80	1.42	–	0.71	− 1.5
Belgium	+ 20.5	Sep	+ 13.0	Jun	+ 3.2	+ 3.2	103.6§	103.0	0.74	0.80	1.42	–	0.71	− 0.1
Britain	−103.2	Oct	− 47.4	Q3	− 2.5	− 2.7	102.3	100.3	0.52	0.56	–	0.70	0.50	− 3.2
Canada	+ 49.6	Oct	+ 26.7	Q3	+ 2.7	+ 2.3	92.6	87.7	1.23	1.31	2.37	1.66	1.19	+ 1.1
Denmark	+ 9.5	Oct	+ 6.2	Oct	+ 3.0	+ 2.6	107.6	107.0	5.50	5.96	10.6	7.44	5.31	+ 0.9
France	− 5.2	Oct	− 3.1	Oct	+ 0.2	+ 0.2	107.2§	106.4	0.74	0.80	1.42	–	0.71	− 3.7
Germany	+189.1	Oct	+ 91.5	Oct	+ 3.3	+ 3.1	105.0§	103.9	0.74	0.80	1.42	–	0.71	− 3.9
Italy	+ 0.1	Oct	− 11.8	Oct	− 0.9	− 1.0	76.4§	75.8	0.74	0.80	1.42	–	0.71	− 2.9
Japan	+135.8	Oct	+169.9	Oct	+ 3.5	+ 3.4	136.0	136.8	104	107	200	140	–	− 6.5
Netherlands	+ 35.6	Oct	+ 21.0	Q3	+ 2.9	+ 3.0	103.2§	102.4	0.74	0.80	1.42	–	0.71	− 2.9
Spain	− 68.5	Sep	− 41.3	Sep	− 3.3	− 3.6	77.6§	77.1	0.74	0.80	1.42	–	0.71	− 1.1
Sweden	+ 22.5	Nov	+ 26.2	Q3	+ 7.3	+ 6.6	84.0	82.5	6.66	7.27	12.8	9.01	6.43	+ 0.5
Switzerland	+ 7.9	Oct	+ 45.9	Q2	+11.7	+11.2	114.1	111.8	1.14	1.25	2.20	1.55	1.10	− 1.6
United States	−634.0	Oct	−603.2	Q3	− 5.5	− 5.6	89.5	95.3	–	–	1.93	1.35	0.97	− 4.4
Euro area	+ 94.7	Oct	+ 47.3	Oct	+ 0.5	+ 0.5	94.8	92.4	0.74	0.80	1.42	–	0.71	− 2.9
MORE COUNTRIES	Data for the countries below are not provided in printed editions of *The Economist*													
Finland	+ 13.7	Oct	+ 7.7	Oct	na	na	82.4§	81.7	0.75	0.80	1.44	–	0.72	+ 2.3
Greece	− 30.1	Sep	− 10.3	Sep	na	na	59.8§	59.5	0.75	0.80	1.44	–	0.72	− 5.3
Iceland	− 0.5	Oct	− 0.6	Q3	na	na	96.6**	93.2	61.7	71.8	119	83.5	59.6	+ 0.1
Ireland	+ 41.5	Oct	− 1.6	Q3	na	na	95.5§	94.7	0.75	0.80	1.44	–	0.72	+ 0.2
Luxembourg	− 4.3	Sep	+ 2.1	Q2	na	na	103.6§	103.0	0.75	0.80	1.44	–	0.72	− 0.4
New Zealand	− 2.6	Oct	− 5.3	Q3	na	na	108.0	101.7	1.39	1.54	2.68	1.88	1.34	+ 2.9
Norway	+ 33.6	Nov	+ 33.2	Oct	na	na	98.5	96.0	6.12	6.75	11.8	8.28	5.91	+ 8.2
Portugal	− 17.4	Sep	− 12.0	Oct	na	na	93.6**	93.3	0.75	0.80	1.44	–	0.72	− 2.9

*Merchandise. Australia, Britain, France, Canada, Japan and United States imports fob, exports fob. All others cif/fob. †Bank of England except §IMF, October average. ‡OECD forecast. **IMF, August average.

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Current-account balances

Dec 29th 2004
From The Economist print edition

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Overview

Dec 29th 2004
From The Economist print edition

In **Argentina**, GDP rose by 8.3% in the year to the third quarter. In **Venezuela**, industrial production rose by 14.7% in the 12 months to October.

Industrial output in **Taiwan** rose by 5.4% in the year to November.

In **Russia**, industrial production in November fell by 3.6% compared with October, but was 6.0% higher than a year before.

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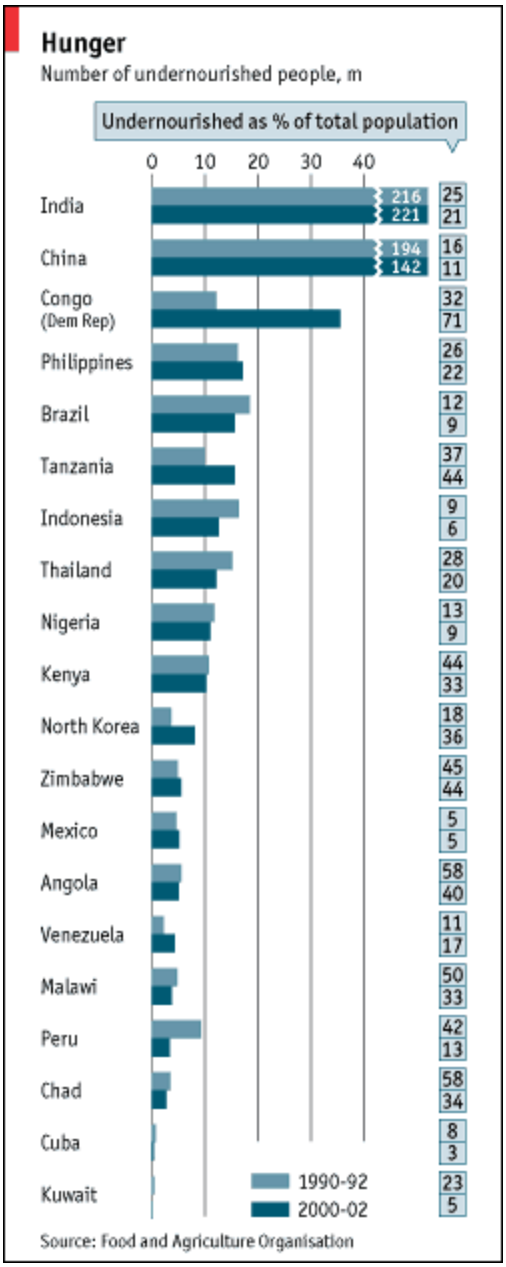
Hunger

Dec 29th 2004
From The Economist print edition

An estimated 852m people are undernourished, says a new report from the Food and Agriculture Organisation. While some countries, such as China and Brazil, have reduced their undernourished populations since the early 1990s, Tanzania and North Korea are among those with rising numbers of hungry people. According to the report, more than 5m children die each year from hunger-related causes, and undernutrition is costing the world $30 billion a year in direct medical costs alone.



Economy

Dec 29th 2004
From The Economist print edition

	% change on year ago						Latest 12 months, $bn				Foreign reserves* $bn, latest	
	GDP		Industrial production		Consumer prices		Trade balance		Current account			
China	+ 9.1	Q3	+14.8	Nov	+ 2.8	Nov	+26.6	Nov	+45.9	2003	514.5	Sep
Hong Kong	+ 7.2	Q3	+ 3.4	Q3	+ 0.2	Nov	−12.4	Nov	+13.6	Q2	121.5	Nov
India	+ 7.4	Q2	+10.1	Oct	+ 4.6	Oct	−21.3	Nov	+11.0	Q2	121.2	Nov
Indonesia	+ 5.0	Q3	− 2.3	Aug	+ 6.2	Nov	+25.6	Oct	+ 3.9	Q2	34.1	Oct
Malaysia	+ 6.8	Q3	+ 6.9	Oct	+ 2.2	Nov	+21.4	Oct	+13.6	Q2	58.6	Oct
Philippines	+ 6.3	Q3	+ 7.2	Sep	+ 7.6	Nov	− 1.3	Oct	+ 4.4	Sep	12.6	Nov
Singapore	+ 7.5	Q3	+13.2	Nov	+ 1.7	Nov	+15.1	Nov	+29.0	Q3	110.1	Nov
South Korea	+ 4.6	Q3	+10.1	Nov	+ 3.3	Nov	+29.4	Nov	+27.5	Oct	192.5	Nov
Taiwan	+ 5.3	Q3	+ 5.4	Nov	+ 1.5	Nov	+ 8.1	Nov	+24.8	Q3	239.1	Nov
Thailand	+ 6.0	Q3	+ 5.5	Oct	+ 3.0	Nov	+ 1.6	Oct	+ 7.2	Oct	45.1	Oct
Argentina	+ 8.3	Q3	+ 5.4	Nov	+ 5.4	Nov	+12.5	Oct	+ 3.6	Q3	18.9	Nov
Brazil	+ 6.1	Q3	+ 2.7	Oct	+ 7.2	Nov	+33.0	Nov	+10.7	Nov	49.4	Oct
Chile	+ 6.8	Q3	+ 5.2	Oct	+ 2.5	Nov	+ 8.2	Nov	+ 2.0	Q3	16.0	Nov
Colombia	+ 2.4	Q3	+ 2.4	Sep	+ 5.8	Nov	+ 0.8	Sep	− 1.6	Q2	12.8	Nov
Mexico	+ 4.4	Q3	+ 1.8	Oct	+ 5.4	Nov	− 5.9	Oct	− 5.5	Q3	60.9	Oct
Peru	+ 2.1	Oct	+ 6.1	Oct	+ 4.1	Nov	+ 2.4	Oct	− 0.3	Q3	11.5	Nov
Venezuela	+15.8	Q3	+14.7	Oct	+19.5	Nov	+21.5	Q3	+14.4	Q3	16.4	Sep
Egypt	+ 4.3	2004†	+ 2.3	2003†	+11.9	Sep	− 8.1	Q3	+ 4.1	Q3	13.5	Aug
Israel	+ 3.4	Q3	+ 8.2	Oct	+ 0.9	Nov	− 6.2	Nov	+ 0.5	Q3	27.2	Nov
South Africa	+ 3.8	Q3	+ 5.3	Oct	+ 3.7	Nov	− 2.1	Oct	− 4.7	Q3	12.6	Nov
Turkey	+ 4.5	Q3	+ 1.5	Oct	+ 9.8	Nov	−32.5	Oct	−14.2	Oct	35.3	Nov
Czech Republic	+ 3.6	Q3	+ 8.1	Oct	+ 2.9	Nov	− 1.8	Oct	− 6.4	Q3	28.2	Nov
Hungary	+ 3.7	Q3	+ 8.4	Oct	+ 5.8	Nov	− 3.0	Q2	− 8.4	Q2	15.2	Nov
Poland	+ 4.8	Q3	+11.3	Nov	+ 4.5	Nov	− 5.1	Sep	− 3.4	Sep	34.1	Oct
Russia	+ 6.4	Q3	+ 6.0	Nov	+11.7	Nov	+81.2	Oct	+44.6	Q3	113.7	Nov
MORE COUNTRIES	Data for the countries below are not provided in printed editions of *The Economist*											
Estonia	+ 6.1	Q3	+ 6.3	Oct	+ 4.7	Nov	− 2.5	Sep	− 1.5	Q2	1.5	Oct
Latvia	+ 9.1	Q3	− 0.8	Oct	+ 7.2	Nov	− 2.6	Oct	− 1.6	Oct	1.8	Oct
Lithuania	+ 5.8	Q3	na		+ 3.0	Nov	− 3.1	Oct	− 1.8	Q2	3.4	Oct
Slovakia	+ 5.3	Q3	+ 0.2	Oct	+ 6.3	Nov	− 1.0	Oct	− 1.0	Aug	13.0	Oct
Slovenia	+ 4.9	Q3	− 3.0	Oct	+ 3.6	Nov	− 1.0	Oct	− 0.8	Oct	8.0	Sep
Pakistan	+ 6.4	2004†	+18.6	Jul	+ 9.3	Nov	− 5.3	Nov	+ 0.8	Q3	10.5	Oct
Saudi Arabia	+ 7.2	2003	na		+ 0.4	Oct	+59.1	2003	+28.0	2003	27.1	Oct

*Excluding gold, except Singapore; IMF definition. †Year ending June.

Sources: National statistics offices, central banks and stock exchanges; Thomson Datastream; Economist Intelligence Unit; Reuters; J.P. Morgan Chase; Hong Kong Monetary Authority; Centre for Monitoring Indian Economy; FIEL; EFG-Hermes; Bank Leumi Le-Israel; Standard Bank Group; Akbank; Deutsche Bank

Financial markets

Dec 29th 2004
From The Economist print edition

	Currency units			Interest rates	Stockmarkets	% change on		
	per $		per £	short-term	Dec 28th		Dec 31st 2003	
	Dec 28th	year ago	Dec 28th	% a year		one week	in local currency	in $ terms
China	8.28	8.28	15.9	3.20	1,342.6	+0.3	– 14.4	– 14.4
Hong Kong	7.77	7.76	15.0	0.33	14,197.0	+0.1	+ 12.9	+ 12.8
India	43.7	45.6	84.2	5.27	6,563.5	+1.7	+ 12.4	+ 17.4
Indonesia	9,319	8,465	17,952	7.56	1,003.9	+2.8	+ 45.1	+ 31.1
Malaysia	3.80	3.80	7.32	2.82	906.6	nil	+ 14.2	+ 14.2
Philippines	56.3	55.6	108.4	7.88	1,826.0	+2.8	+ 26.6	+ 24.9
Singapore	1.64	1.70	3.15	1.44	2,058.1	–0.3	+ 16.6	+ 21.1
South Korea	1,043	1,198	2,008	3.42	878.4	–0.5	+ 8.4	+ 23.8
Taiwan	32.0	34.0	61.7	1.25	6,000.6	+0.2	+ 1.9	+ 8.0
Thailand	39.0	39.6	75.1	2.35	662.4	–1.4	– 14.2	– 12.9
Argentina	2.97	2.95	5.71	4.94	1,366.7	+3.1	+ 27.5	+ 26.0
Brazil	2.70	2.87	5.20	17.74	26,116.6	+0.9	+ 17.5	+ 25.6
Chile	562	597	1,082	2.64	8,940.1	–0.6	+ 21.9	+ 28.5
Colombia	2,420	2,776	4,662	7.73	4,363.6	+5.2	+ 87.0	+114.8
Mexico	11.2	11.2	21.6	8.60	12,912.7	+2.1	+ 46.8	+ 47.4
Peru	3.28	3.47	6.31	3.01	3,605.4	nil	+ 48.1	+ 56.5
Venezuela	2,537§	2,881§	4,888	13.63	29,800.1	+0.9	+ 34.2	+ 50.8
Egypt	6.23	6.18	12.00	9.90	23,553.1	–0.2	+102.4	+100.3
Israel	4.35	4.37	8.38	1.00	630.0	+2.2	+ 17.9	+ 19.2
South Africa	5.64	6.72	10.9	7.60	12,593.4	+1.1	+ 21.2	+ 43.6
Turkey	1,352,000	1,411,000	2,604,493	20.90	24,935.8	+3.7	+ 33.9	+ 39.1
Czech Republic	22.5	26.1	43.3	2.56	1,020.5	+1.8	+ 54.8	+ 76.7
Hungary	180	209	348	9.38	14,470.7	–1.6	+ 54.3	+ 77.3
Poland	2.98	3.76	5.75	6.67	26,060.9	–1.1	+ 25.2	+ 57.1
Russia	27.8	29.4	53.5	13.00	600.1‡	+2.4	+ 0.6	+ 5.8
EMF (MSCI)*	1.00	1.00	1.93	na	534.4	+1.3	+ 20.7	+ 20.7
EMBI+†	1.00	1.00	1.93	na	328.3	–0.3	+ 11.4	+ 11.4

*Emerging Mkts Free. †J.P. Morgan Chase's Emerging Mkts Bond Index Plus. ‡In $ terms. §Floating exchange rate.

Sources: National statistics offices, central banks and stock exchanges; Thomson Datastream; Economist Intelligence Unit; Reuters; J.P. Morgan Chase; Hong Kong Monetary Authority; Centre for Monitoring Indian Economy; FIEL; EFG-Hermes; Bank Leumi Le-Israel; Standard Bank Group; Akbank; Deutsche Bank

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